Browse to NWS Project Geophysical and Geotechnical Surveys Environment Plan (Commonwealth)

Global Wells and Seismic

October 2026

Revision: 1

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1. INTRODUCTION

1.1 Overview

Woodside Energy Limited (Woodside), as Operator of the Browse to North West Shelf (NWS) Project (the 'Project'), plan to undertake a series of geophysical and geotechnical (GPGT) surveys. The Petroleum Activity will consist of a number of individual exploration survey campaigns to acquire appraisal data to inform the assessment and planning of potential future development opportunities. The purpose of these surveys is to gather this data, rather than the recovery of petroleum. The survey will acquire data to characterise seabed and subsurface geological conditions and support a range of engineering, environmental and heritage assessment activities, including optimisation of the pipeline route, identification of suitable MODU anchoring locations, and the development of FEED design and cost estimates for subsea infrastructure. The surveys provide information to support decision making on potential future infrastructure siting, design and development planning and may also provide data on existing infrastructure.

The project covers both State and Commonwealth Waters and has been separated into three Environment Plans (EP).

Woodside, as Titleholder under the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023* (Cth) (referred to as the Environment Regulations), proposes to undertake GPGT activities within Permit Area(s) (WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R). In this document, the GPGT survey activities are referred to as the Petroleum Activity.

This EP details the Petroleum Activity within the Commonwealth Waters of the Torosa, Calliance and Brecknock fields. The Petroleum Activity are considered a Petroleum Activity for the purposes of Regulation 5 of the Environment Regulations. A detailed description of the Petroleum Activity 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).

1.2 Purpose of the Environment Plan

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

- The potential environmental impacts and risks (planned [routine and non-routine] and unplanned) that may result from the Petroleum Activity are identified.
- Appropriate management controls are identified and implemented to reduce impacts and risks to a level that is 'as low as reasonably practicable' (ALARP) and acceptable.
- The Petroleum Activity are 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* (Cth) [EPBC Act]).

1.3 Environment Plan summary

Table 1-1 summarises the content of this EP, as required by Regulation 35(7).

Table 1-1: EP summary

EP summary material requirement	Relevant section of this EP containing EP summary material
Details of the Titleholder's nominated liaison person for the activity	Section 1.6
A description of the activity	Section 3
The location of the activity	Section 3.3
A description of the receiving environment	Section 4
Consultation already undertaken and plans for ongoing consultation	Section 5

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EP summary material requirement	Relevant section of this EP containing EP summary material
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 7.12

1.4 Structure of the Environment Plan

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

Table 1-2: 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: • Environmental assessment Regulation 22: • Implementation strategy for the EP Regulation 24: • Other information in the EP	The principle of 'nature and scale' is applicable throughout the EP	Section 2 Section 3 Section 4 Section 5 Section 6 Section 6.11
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): • 21(1) Description of the activity • 21(2) and (3) Description of the environment • 21(4) Requirements • 21(5) and (6) Evaluation of environmental impacts and risks • 21(7) Environmental Performance Outcomes and standards • Regulations 24(a)–24(c): • A statement of the Titleholder's corporate environmental policy • A report on all consultations between the Titleholder and any relevant person	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 6.11
Regulation 34(d): Provides for appropriate Environmental Performance Outcomes, environmental performance standards and measurement criteria	Regulation 21(7): • Environmental Performance Outcomes and standards	Environmental Performance Outcomes (EPOs) Environmental performance standards (EPSs) Measurement criteria (MCs)	Section 6
Regulation 34(e): Includes an appropriate implementation strategy and	Regulation 22: • Implementation strategy for the EP	Implementation strategy, including: Environmental Management System (EMS)	Section 6.11

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Criteria for acceptance	Content requirements/relevant regulations	Elements	Section of EP
monitoring, recording and reporting arrangements		Performance monitoring Oil Pollution Emergency Plan (OPEP – per Appendix G) and scientific monitoring Ongoing consultation	
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): • 21(1) Description of the activity • 21(2) Description of the environment • 21(3) Without limiting Regulation 21(2)(b), relevant values and sensitivities may include any of the following: – (a) the world heritage values of a declared World Heritage property within the meaning of the EPBC Act; – (b) the national heritage values of a National Heritage place within the meaning of that Act; – (c) the ecological character of a declared Ramsar wetland within the meaning of that Act; – (d) the presence of a listed threatened species or listed threatened ecological community within the meaning of that Act; – (e) the presence of a listed migratory species within the meaning of that Act; – (f) any values and sensitivities that exist in, or in relation to, part or all of: ▪ (i) a Commonwealth marine area within the meaning of that Act; or ▪ (ii) Commonwealth land within the meaning of that Act.	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 required by Regulation 25 (ii) the measures (if any) that the Titleholder has adopted, or proposes to adopt, because of the consultations are appropriate	Regulation 25: • Consultation with relevant authorities, persons and organisations, etc. Regulation 24(b): • A report on all consultations between the Titleholder and any relevant person	Consultation undertaken in the preparation of this EP.	Section 5
Regulation 34(h):	Regulation 21(4)(a):	All contents of the EP must comply with the *Offshore*	Section 1.5

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Criteria for acceptance	Content requirements/relevant regulations	Elements	Section of EP
Complies with the Act and the regulations	• Describe the requirements, including legislative requirements, that apply to activity and are relevant to the environmental management of the activity Regulation 23: • Details of the Titleholder and liaison person Regulation 24(a): • A statement of the Titleholder's corporate environmental policy Regulation 24(c): • Details of all reportable incidents in relation to the proposed activity	*Petroleum and Greenhouse Gas Storage Act 2006* (Cth) (OPGGS Act) and the Environment Regulations	Section 6.11

1.5 Description of the Titleholder

Woodside Energy Limited (Woodside) submits the EP as Titleholder for this activity, of the Browse Joint Venture.

1.6 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.

1.6.1 Titleholder

Woodside Energy Limited
11 Mount Street
Perth, Western Australia

T: 08 9348 4000

ACN: 63 005 482 986

1.6.2 Nominated liaison person

Nicolas Wirtz
Corporate Affairs Manager
11 Mount Street
Perth, Western Australia

T: 08 9348 4000

Email: feedback@woodside.com

1.6.3 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.

1.7 Woodside Management System

The Woodside Management System (Our WMS) defines the core mandatory activities that support safeguarding the business and enabling its people to achieve objectives, manage uncertainty and meet obligations to deliver value for the company and its stakeholders.

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1.7.1 Our WMS Purpose

Our WMS is a series of integrated business processes that contribute to value delivery. A process is defined as the core mandatory activities that are material to converting inputs to outputs for value delivery from the defined business area. A process must reflect relevant corporate drivers and may have associated tools that support its implementation. Our WMS activities are divided into two categories; Deliver Value Chain – for activities directly involved in value delivery and Enable Value Chain – for activities supporting the enterprise and value delivery. The Health, Safety and Environment sub-category is included in the Enable Value Chain category. Given this, there is interdependence between processes across these activities.

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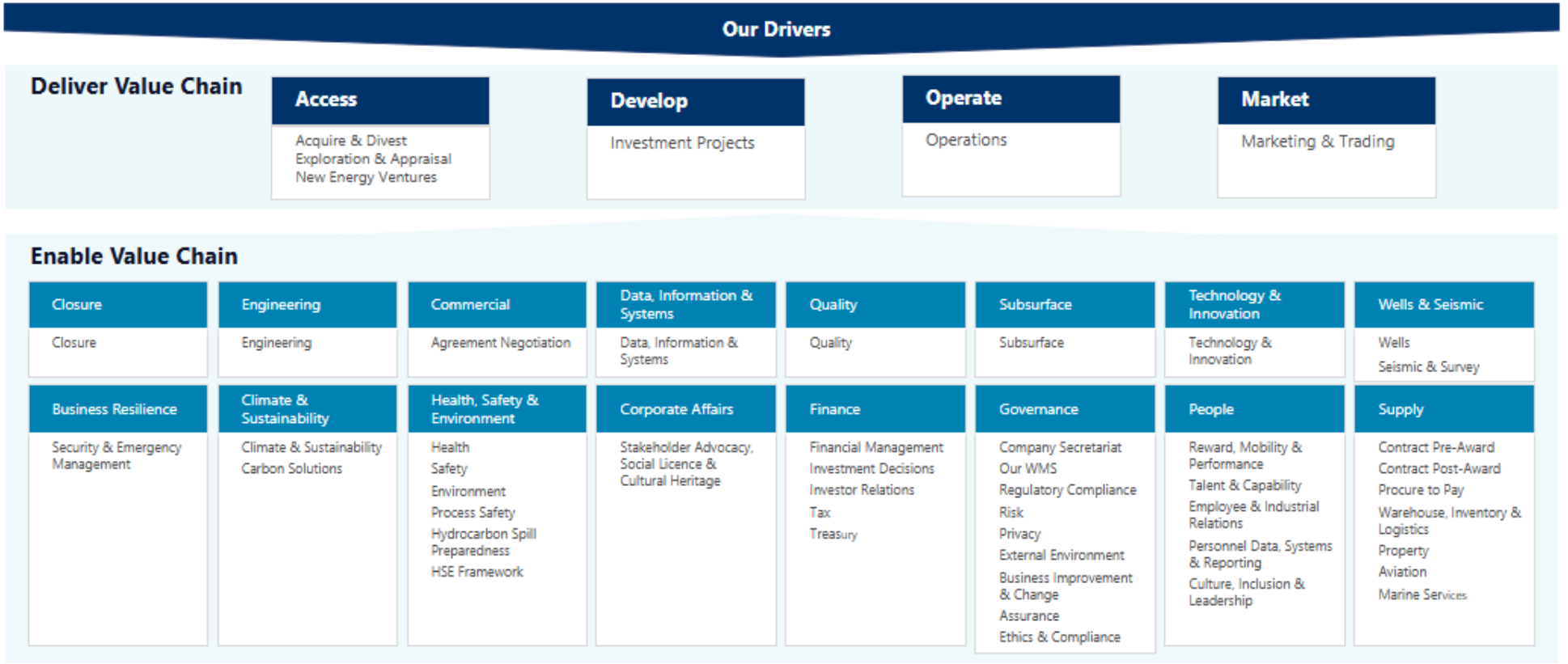


Figure 1-1: The Woodside Management System Structure

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Our WMS content is structured in a hierarchy as illustrated in Figure 1-2. This hierarchy begins with the 'why' through Our Drivers, which are defined by the Board and Executive. It is followed by 'The What' with Our Expectations, which establish mandatory requirements for executing process activities to deliver value in accordance with the relevant Our Drivers. Finally, it includes 'The How' through Tools, which support the implementation, execution, or understanding of Our Expectations. Additionally, there is Non-WMS content that is subordinate to, but sits outside, Our WMS.

Adaptations of Our WMS tools may, as applicable and justified, be created for regional application.

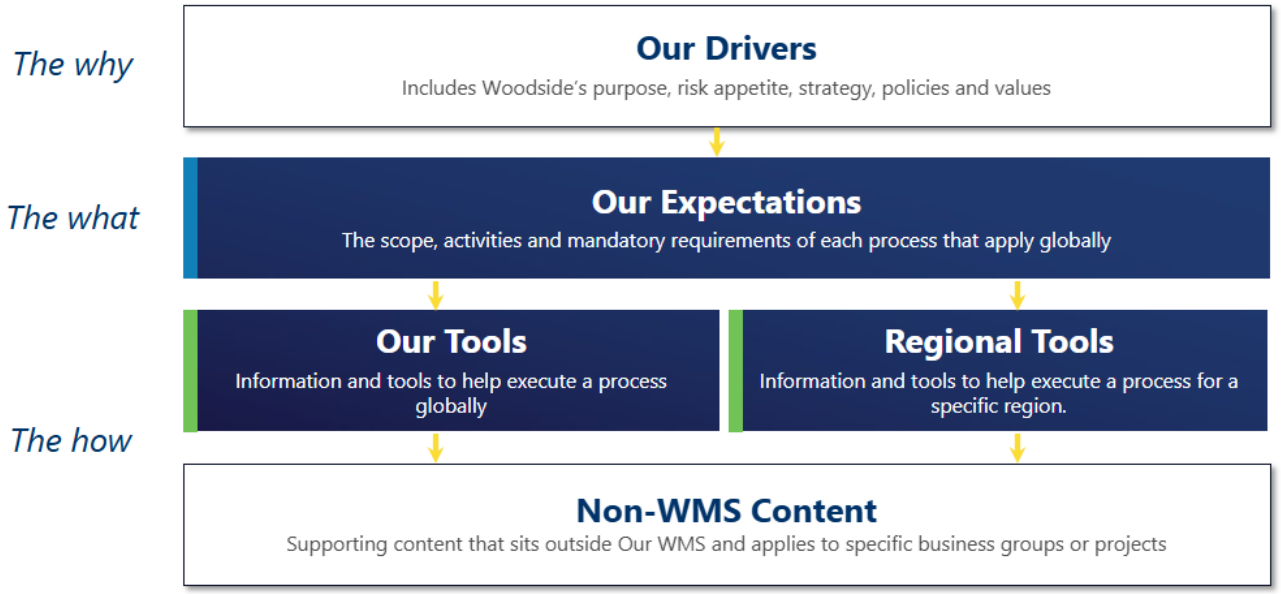


Figure 1-2: Our WMS information structure and document hierarchy

1.7.2 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.

1.8 Description of relevant requirements

In accordance with Regulation 21(4) of the Environment Regulations, a description of the requirements, including legislative requirements, that apply to the Petroleum Activity and relevant to the environmental management of the Petroleum Activity are detailed in Appendix B and summarised in the following paragraphs.

1.8.1 *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (Cth) (OPGGS Act)

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.

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

1.8.2 *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (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.

The Petroleum Activity described in this EP is a discrete, pre-development data acquisition activity undertaken to inform potential development and is not part of any current EPBC Act controlled action or approval. An assessment of MNES has been undertaken as part of this EP, taking into account the temporary, localised and low-intensity nature of the survey activities, and has determined that the Petroleum Activity is unlikely to result in a significant impact on MNES.

As outlined by Section 146B of the EPBC Act, separate EPBC approval is not required for this EP.

1.8.2.1 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 6.10.

1.8.2.2 Australian Marine Parks

Under the EPBC Act, Australian Marine Parks (AMPs) are recognised for conserving marine habitats and the species that live and rely on these habitats. The Director of National Parks (DNP) is responsible for managing AMPs (supported by Parks Australia) and is required to publish management plans for them. Under Section 362 of the EPBC Act, other parts of the Commonwealth Government must not perform functions or exercise powers in relation to these parks that are inconsistent with management plans. Therefore, NOPSEMA is required to consider potential impacts from petroleum activities on AMPs

Specific zones within AMPs have been allocated conservation objectives based on the Australian International Union for Conservation of Nature (IUCN) reserve management principles outlined in Schedule 8 of the EPBC Regulations 2025. The principles for each zone determine what activities are acceptable within a protected area under the EPBC Act. Section 4 provides a description of the AMPs that are overlapped by

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the Operational Area and environment that may be affected (EMBA) and the relevant zones that the Petroleum Activity are likely to interact with.

The Operational Area does not overlap any AMPs. Ashmore Reef Sanctuary Zone and Recreational Zone (classified as an AMP) is overlapped by the EMBA. The survey vessels will not enter the Ashmore Reef Marine Park at any time (unless there is an emergency that requires it).

1.8.2.3 World Heritage Properties

The Operational Area and EMBA do not overlap any World Heritage properties.

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2. ENVIRONMENT PLAN 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 method 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 methods 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 Sections 2.3 to 2.8.

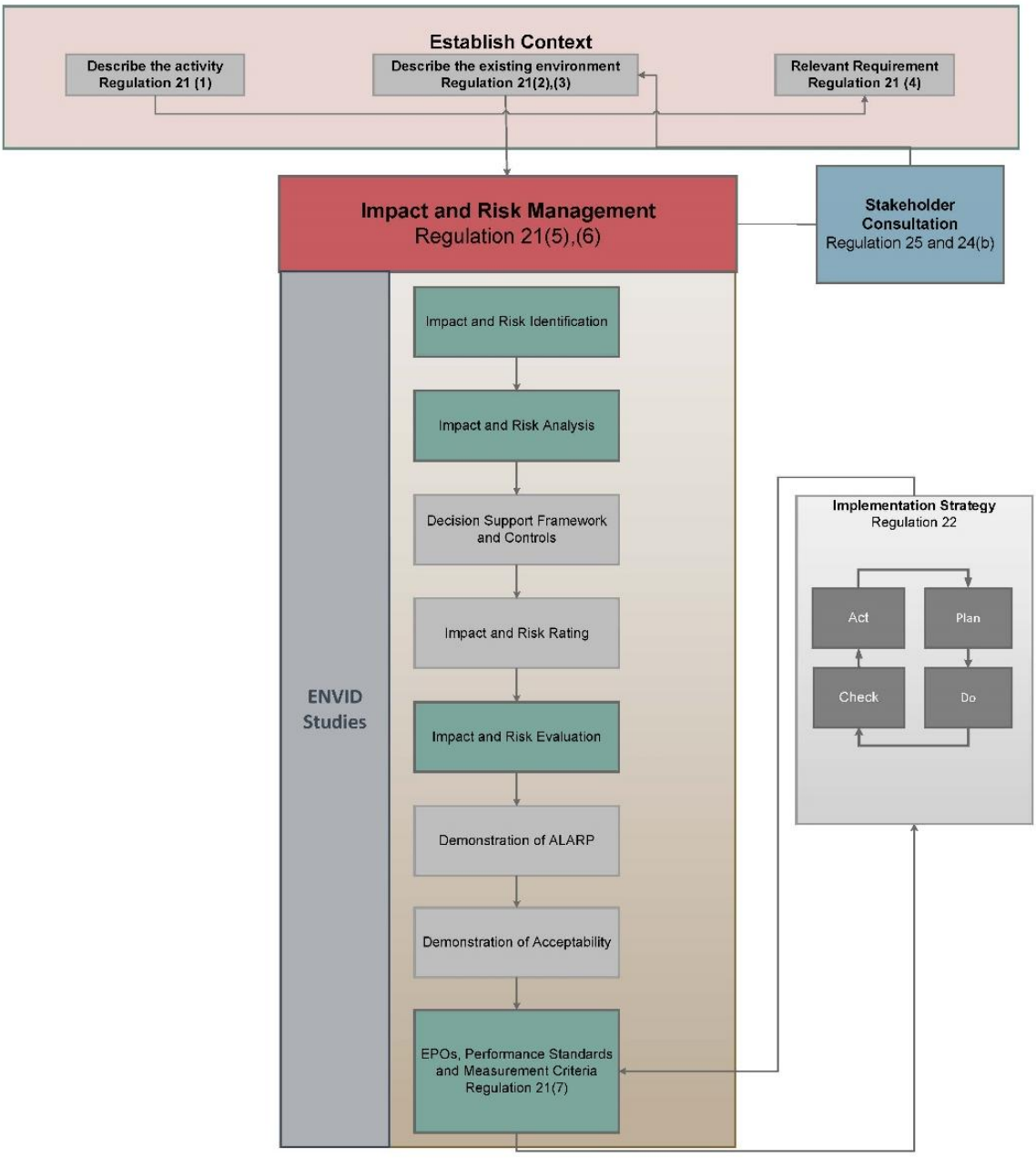


Figure 2-1: EP development process

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2.3 Establish the context

Context is established by considering the proposed activities associated with the 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 for the identification of environmental aspects for each activity.

2.3.1 Activity description

The EP describes the activity, including:

- the location or locations of the activity; general details of the construction and layout of the facility used in undertaking the activity
- an outline of the operational details of the activity and proposed timetables for undertaking the activity
- additional information relevant to consideration of environmental impacts and risks of the activity.

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

This activity is described in Section 3 and is referred to as the Petroleum Activity.

2.3.2 Existing environment description

The values and sensitivities relevant to environment where the Petroleum Activity is proposed to be undertaken have been identified in Section 4.6, to the extent required to inform impact and risk assessment to environmental receptors from the Petroleum Activity.

A full description of the relevant values and sensitivities relevant to the Petroleum Activity is contained within the Master Existing Environment document provided at Appendix C.

2.3.3 Environmental legislation and other requirements

Relevant legislation and other requirements that apply to the Petroleum Activity are presented in Section 1.8 and Appendix B. These requirements have been considered throughout the development of this EP.

2.3.4 Impact and risk management

2.3.4.1 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.'

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

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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).

The environmental impact and risk assessments presented in this EP has been informed by historic as well as more recent hazard and environmental risk identification studies (e.g. HAZID/ENVID) and consequence modelling studies for high consequence, low probability environmental risks. These studies have been reviewed and revalidated, as required, for the development of a new EP. Further, feedback from NOPSEMA to Woodside across Woodside's portfolio of environment plans has been considered and integrated, where relevant.

Impacts, risks and potential consequences were identified based on planned and potential interaction with the activity (based on the description in Section 3), the existing environment (Section 4) and the outcomes of Woodside's stakeholder engagement process (Section 5). The environment outputs of applicable risk and impact workshops and associated studies are referred to as ENVID in this EP.

Impacts and risks were evaluated and tabulated for each planned activity and unplanned events respectively. Environmental impacts and risks were recorded in an environmental impacts and risk register. The output of the workshop is used to present the risk assessment and form the basis of EPOs, EPSs, and MC. This information is presented in Section 6, following the format presented in Table 2-1.

Table 2-1: Example of layout of identification of risks and impacts in relation to risk sources

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
Summary of source of impact/risk													

2.3.4.2 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.

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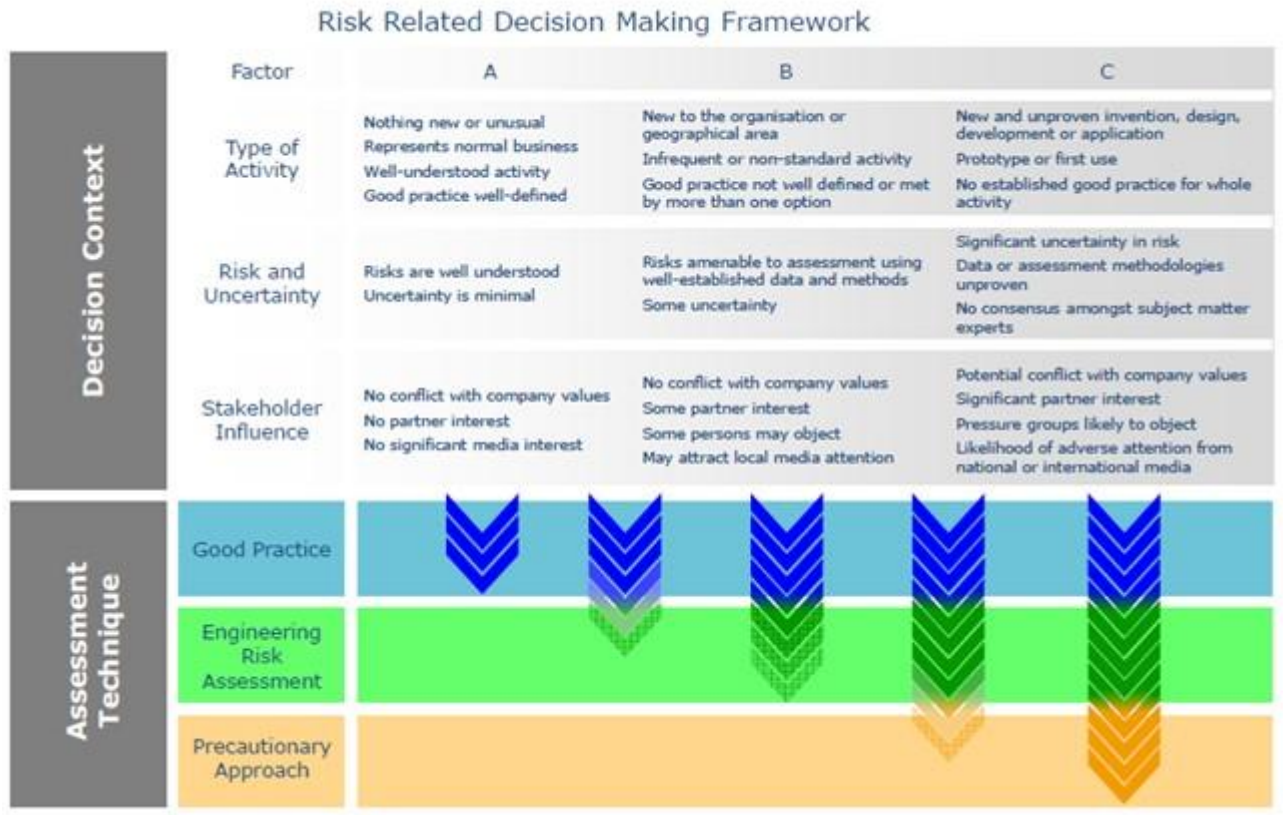


Figure 2-2: Risk-related decision-making framework

Source: (Oil and Gas UK 2014)

2.3.4.2.1 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.

2.3.4.2.2 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.

2.3.4.2.3 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.

2.3.4.3 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.

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- 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 Our Values. Views, concerns and perceptions are to be considered from internal Woodside stakeholders directly affected by the planned impact or potential risk.
- Societal Values (SV): identifies the views, concerns and perceptions of relevant stakeholders and addresses relevant stakeholder views, concerns and perceptions.

2.3.4.4 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.

2.3.5 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[1].
- 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
  - 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.

[1] *A hazard has the potential to cause harm to the environment.*

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- 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).

2.3.6 Impact and risk classification

Environmental impacts and risks are assessed to determine their potential impact consequence 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.

2.3.6.1 Impact classification

Using the Woodside Environment Risk and Impact Rating Tool as a guide, environmental impacts are assessed to determine the potential consequence level. The process for determining the consequence levels is described in Section2.3.6.1.1.

2.3.6.1.1 Assign the consequence level

The consequence level (Severe, Major, Moderate, Minor, Localised and Low-Level, and No Lasting Effect) is determined through a classification framework that incorporates:

- significance[2] of the feature of area
- scale of the impact on the feature (e.g. species, population, habitat) or area (size)
- recoverability, defined as the ability of the feature or area to naturally recover from the impact within a nominal period.

2.3.6.1.2 Consequence level descriptions

Table 2-2 describes the possible environment, community and culture consequence levels for each identified impact and risk, assuming all controls (preventative and mitigative) are absent or have failed. Where multiple receptors have the potential to be impacted, the worst-case consequence level is carried into the final impact and risk assessment and evaluation.

[2] *For the purposes of describing the Woodside Environment Risk and Impact Rating Tool, references to significance in impact and risk classification, use significance as defined in the Woodside Environment Risk and Impact Rating Tool.*

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Table 2-2: Woodside impact and impact risk matrix (environment and community and culture) consequence descriptions

Environment	*Social and cultural*		*Consequence level*
Severe impact on a sensitive feature(s) or receiving environment, such as permanent impairment on a highly sensitive area or feature.	Severe, long-term impact to a community, social infrastructure or highly valued areas or items of international cultural and social significance.	***Severe***	***A***
Major impact on environmental feature(s) or area(s), such as impact on feature or area of national importance with limited ability to recover.	Major, long-term impact to a community, social infrastructure or highly valued areas/items of national cultural significance.	***Major***	***B***
Moderate impact on environmental feature(s) or area(s), such as impact on feature or area of heightened sensitivity with limited ability to recover.	Moderate, medium-term impact to a community, social infrastructure of highly valued areas or items of national cultural significance.	***Moderate***	***C***
Minor impact on environmental feature(s) or area(s) such as impact on feature of low significance with some ability to recover.	Minor, short-term impact to a community or areas/items of cultural significance.	***Minor***	***D***
Localised and low-level impact on environmental feature(s) or area(s) of low significance.	Slight, short-term impact to a community or areas/items of cultural significance.	***Localised and Low Level***	***E***
No lasting effect, localised impact not significant to environmental receptors	Temporary localised impact not significant to areas/items of cultural significance.	***No Lasting Effect***	***F***

2.3.6.2 Risk classification

The risk rating process assigns a level of risk to each risk event, measured in terms of consequence (Section 2.3.6.1.2) and likelihood (Section 2.3.6.2.1). The assigned risk rating is determined with controls in place; therefore, the risk rating is determined after identifying the decision type and appropriate control measures. The risk ratings are assigned using the Woodside risk matrix (refer to Table 2-4).

2.3.6.2.1 Assign the likelihood level

Likelihood is determined based on the chance of the selected worst-case consequence occurring, assuming reasonable effectiveness of preventative and mitigative controls (Table 2-3).

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Table 2-3: Woodside risk matrix likelihood levels

	Likelihood description					
	Remote	***Highly unlikely***	***Unlikely***	***Possible***	***Likely***	***Highly likely***
Frequency	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
Experience	Unheard of in the industry	Has occurred once or twice in the industry	Has occurred many times in the industry but not in the company.	Has occurred once or twice in the company.	Has occurred frequently in the company.	Has occurred frequently the location or activity.
Likelihood level	0	1	2	3	4	5

2.3.6.2.2 Determine 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					
	0	***1***	***2***	***3***	***4***	***5***
A	A0	A1	A2	A3	A4	A5
B	B0	B1	B2	B3	B4	B5
C	C0	C1	C2	C3	C4	C5
D	D0	D1	D2	D3	D4	D5
E	E0	E1	E2	E3	E4	E5
F	F0	F1	F2	F3	F4	F5

Risk rating
Severe
Very High
High
Moderate
Low

Note: Very High and Severe risks based on HSE impacts are intolerable – Action Required

2.4 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.

2.4.1 Demonstration of 'as low as reasonably practicable' (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 'as low as reasonably practicable' demonstration

Risk	Impact	Decision type
Low and moderate (C, D, E or F level consequence)	***No Lasting Effect, Localised and Low Level, or Minor (D, E or F)***	***A***
Woodside demonstrates these impacts, risks and decision types are reduced to ALARP if: • Identified controls meet legislative requirements, industry codes and standards, applicable company requirements and industry guidelines, or		

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Risk	Impact	Decision type
• Further effort towards impact/risk reduction (beyond using opportunistic measures) is not reasonably practicable without sacrifices that are grossly disproportionate to the benefit gained.		
High, very high or severe (A or B level consequence)	***Moderate and above (C, B or A)***	***B and C***
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.		

2.4.2 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
Low and moderate (C, D, E or F level consequence)	***No Lasting Effect, Localised and Low Level or minor (D, E or F)***	***A***
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).		
High, very high or severe (A or B level consequence)	***Moderate and above (C, B or A)***	***B and C***
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. In undertaking this process for moderate and high risks, Woodside evaluates: • the principles of ESD as defined under the EPBC Act • the internal context – the proposed controls and consequence/risk level are consistent with Woodside policies, procedures and standards • the external context – consideration of the environment consequence and stakeholder acceptability are considered • other requirements – the proposed controls and consequence/risk level are consistent with national and international industry standards, laws and policies ad consideration of applicable plans for management and conservation advices, conventions and significant impact guidelines (e.g. MNES). Additionally, very high and severe risks require 'escalated investigation' and mitigation. If after further investigation the risk remains in the very high or severe category, the risk requires appropriate business engagement with increasing involvement of senior management in accordance with Woodside's Risk Management Procedure to accept the risk. This includes due consideration of regulatory requirements.		

2.5 Recovery plan and threat abatement plan assessment

To support the demonstration of acceptability, a separate assessment is undertaken to demonstrate that the EP is not inconsistent with any relevant recovery plans or threat abatement plans, (refer Section 1.8.2.1). This assessment follows the following process:

- Identify relevant listed threatened species and ecological communities (Section 4.5)
- Identify relevant recovery plans and threat abatement plans (Section 6.10)
- 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 6.10)
- 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 6.10)

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2.6 Environmental performance objectives/outcomes, standards and measurement criteria

The Environment Regulations define environmental performance outcomes (EPOs) to mean: 'a measurable level of performance required for the management of environmental aspects of an activity to ensure that environmental impacts and risks will be of an acceptable level'. As such, the process of defining an appropriate EPO, has relied on the required levels of performance set either in:

- legislation (such as the OPGGS Act)
- regulator guidance notes such as the Matters of National Environmental Significance– Significant Impact Guidelines (DoE 2013), or
- specific agreements or expectations with other relevant persons (e.g. fishers or other marine users).

For each evaluated impact and risk, controls adopted during the ENVID and through demonstrating ALARP are paired with activity-specific EPOs, 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.

2.7 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 6.11.

2.8 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.

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3. DESCRIPTION OF THE ACTIVITY

3.1 Overview

This section has been prepared in accordance with Regulation 21(1) of the Environment Regulations and describes the activities to be undertaken as part of the Petroleum Activity under this EP.

3.2 Project overview

Woodside plans to undertake a series of geophysical and geotechnical (GPGT) surveys within the Operational Area to acquire appraisal data to inform the assessment and planning of potential future development opportunities. The purpose of these surveys is to gather this data, rather than the recovery of petroleum. The survey will acquire data to characterise seabed and subsurface geological conditions and support a range of engineering, environmental and heritage assessment activities, including optimisation of the pipeline route, identification of suitable MODU anchoring locations, and the development of FEED design and cost estimates for subsea infrastructure. The surveys provide information to support decision making on potential future infrastructure siting, design and development planning and may also provide data on existing infrastructure.

Table 3-1: Petroleum Activity overview

Item	Description
Petroleum Licence Area	Operational Area Part A: WA-30-R Operational Area Part B: WA-28-R, WA-29-R, WA-31-R, WA-32-R
Location	Commonwealth waters of Torosa and Calliance Brecknock fields
Water depth	Operational Area Part A : ~400-600m Operational Area Part B : ~350-900m
Vessels	Multi-purpose vessels, uncrewed survey vessels, geotechnical drilling vessels and support vessels.
Key activities	Geophysical surveys within the Operational Area using: • multibeam echosounder (MBES), single beam echo sounder, altimeter • side scan sonar (SSS) including variants such as multi-aperture and synthetic aperture sonar • magnetometer / gradiometer and pipe tracker • sub-bottom profiler (SBP), such as but not limited to boomer, sparker, and CHIRP • water sampler • sound velocity sensor / multi-parameter conductivity-temperature-depth profiler • subsea positioning systems (ultra-short baseline (USBL), Ultra Short Baseline (USBL) Doppler Velocity Log (DVL) Inertial Navigation System (INS) • underwater camera • underwater laser scanner Geotechnical surveys within the Operational Area using: • shallow cores and probes: box corer / grab sampler / piston core / gravity core / vibrocore • boreholes: sampling / coring and in situ testing such as Cone Penetration Test (CPT)

3.3 Location

The planned Petroleum Activity for this EP is to be undertaken within an Operational Area with two separate parts. Operational Area Part A is located ~430 km north -northwest of Broome and Operational Area Part B is located ~370km north-north west of Broome in Commonwealth waters off Western Australia (WA).

Water depths range from ~350-900 m.

The activities will occur within multiple titles, as shown in Figure 3-1 and Table 3-2.

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Table 3-2: Location of Operational Area (GDA 94)

Location	Latitude	Longitude
Operational Area Part A (Torosa): Offshore area in Commonwealth waters Within petroleum title: WA-30-R	13° 49′ 55.00″ S 13° 54′ 54.94″ S 13° 54′ 54.94″ S 14° 04′ 54.94″ S 14° 04′ 54.94″ S	122° 07′ 19.52″ E 122° 07′ 19.52″ E 122° 05′ 04.52″ E 122° 05′ 04.52″ E 122° 01′ 49.75″ E
	Then follow Commonwealth / State boundary to:	
	13° 50′ 35.64″ S 13° 49′ 55.00″ S 13° 49′ 55.00″ S	121° 55′ 04.53″ E 121° 56′ 04.52″ E 122° 07′ 19.52″ E
Operational Area Part B (Calliance Brecknock): Offshore area in Commonwealth waters Within petroleum and Greenhouse Gas (GHG) titles: WA-28-R, WA-29-R, WA-31-R, WA-32-R, G-8-AP	14° 23′ 47.55″ S 14° 37′ 53.02″ S 14° 37′ 53.02″ S 14° 41′ 47.03″ S 14° 41′ 47.03″ S 14° 29′ 55.02″ S 14° 29′ 55.02″ S 14° 23′ 47.55″ S 14° 23′ 47.55″ S	121° 41′ 53.95″ E 121° 41′ 53.95″ E 121° 40′ 04.54″ E 121° 40′ 04.54″ E 121° 25′ 04.55″ E 121° 25′ 04.55″ E 121° 30′ 56.41″ E 121° 30′ 56.41″ E 121° 41′ 53.95″ E

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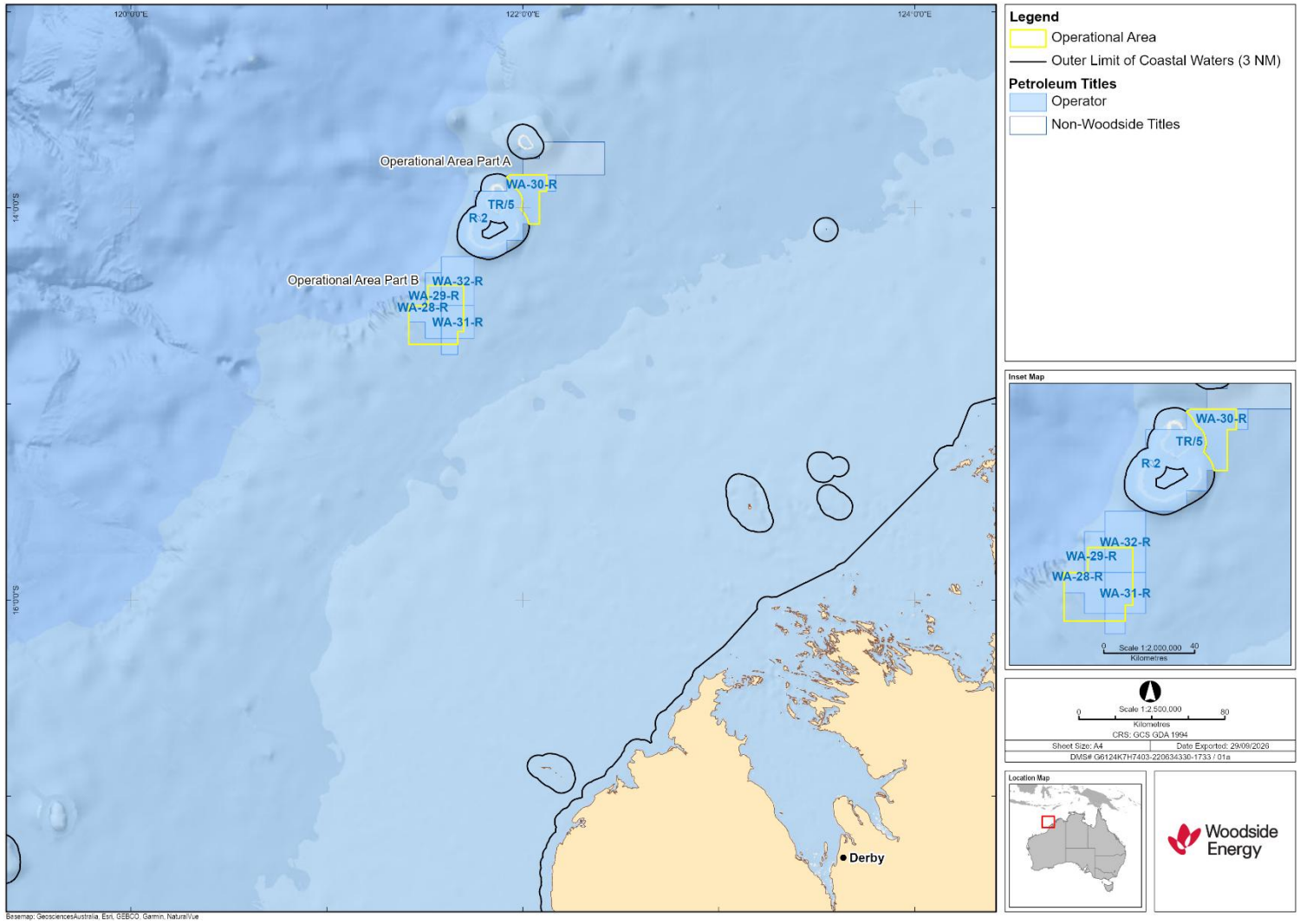


Figure 3-1: Location of the Petroleum Activity

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3.4 Operational Area

The Operational Area applicable to the scope of this EP is shown in Figure 3-1 and consists of two separate parts:

- Operational Area Part A
- Operational Area Part B

Part A and Part B are collectively referred to as the Operational Area.

The coordinates of the Operational Area provided in Table 3-2. Operational Area Part A is approximately 340 km^2 while Operational Area Part B is approximately 860 km^2.

As the exact location of the proposed surveys within the Operational Area may vary, a conservative approach has been employed to assess risks and impacts. This approach considered the existing environment of the entirety of the Operational Area (along with the environment potentially impacted by the credible hydrocarbon spill scenarios) to provide context for the risk assessment (Section 6).

The Operational Area include a 500 m safety exclusion zone around the survey vessels to manage vessel movements. The 500 m safety exclusion zone is under the control of the Person in Charge.

Vessels transiting to and from the Operational Area are outside the scope of this EP.

If any activities conducted within the Operational Area are not covered by Woodside's existing titles, Woodside will obtain all necessary authorisations before proceeding with those activities in vacant acreage.

3.5 Timing

The Petroleum Activity is anticipated to commence from ~Q3 2027. Geophysical and geotechnical activities may be completed over several multi-week campaigns (typically 20–60 days in duration) split over the 5-year period of this EP. Survey activities within the Operational Area defined in Section 3.4 are estimated to take up to a maximum of 90 days per year (during any time in a calendar year). The vessels involved will be operating 24 hours a day.

Timing and duration may be subject to change due to survey vessel availability, unforeseen circumstances and weather. To allow for some flexibility for contingency purposes, the EP allows for the activities to occur at any time throughout the year during the 5-year validity from the date of acceptance of the EP. Therefore, this EP has assessed impacts and risks relevant to geophysical and geotechnical survey activities in all seasons to provide operational flexibility on project schedule and survey vessel availability. Where identified impacts and risks are associated with the activity timing, controls specific to the timing have been assessed, as relevant.

3.6 Geophysical surveys

A geophysical survey is the systematic collection of geophysical data. Survey methods used for the geophysical surveys involve primarily acoustic measurements to characterise the seabed features, seabed morphology and the sub-seabed stratigraphy. A variety of geophysical systems described below may be used depending on seabed soil conditions and the required penetration and resolution. Some of the systems act as the transmitter and receiver; others have a separate transmitter and a short hydrophone streamer as a receiver. The industry accepted techniques are outlined in Table 3-3 and described in the following sections. These will be adopted to achieve the objectives of the geophysical survey scope.

The geophysical survey techniques may occur anywhere within the Operational Area. Geophysical sources emit sound at a variety of intensities and frequencies depending on the information required. A summary of estimated source levels and operating frequencies for the proposed geophysical survey techniques is provided in Table 3-3.

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Table 3-3: Acoustic source characteristics of geophysical survey techniques

Geophysical survey technique	Estimated source sound pressure level ($L_{S,P}$) (dB re 1 µPa m/ dB re 1 µPa @ 1 m)	Estimated source peak pressure level ($L_{S,pk}$) (dB re 1µPa m/ dB re 1 µPa @ 1 m)	Estimated sound exposure level ($L_{S,E}$) (dB re 1µPa^2.s @1 m)	Proposed dominant frequency range (kHz)
Multibeam echosounder	210–245 [1,2,3,5]	N/A	173–188 [2]	150–300 kHz
Side scan sonar	200–235 [1,2,5]	N/A	200 [2]	75–900 [1,2]
Sub-bottom profiler – CHIRP	192–210 [2,4,5]	198–218 [2,4]	171–193 [2, 4]	2–30 [1,2,4]
Sub-bottom profiler – Boomer	200–206 [2,4]	210–217 [2,4]	175–180 [2,4]	0.2–16 [2,4]
Sub-bottom profiler – Sparker	200–220 [1]	N/A	N/A	0.05–4 [1]
Ultra-short baseline (USBL) positioning system	184–202[1]	N/A	N/A	19–34 [1]

1. *Jiménez-Arranz et al. 2017*
2. *Zykov 2013*
3. *MacGillivray et al. 2013*
4. *McPherson and Wood 2017*
5. *Jiménez-Arranz et al. 2020.*

3.6.1 Multibeam echosounder

Multibeam echosounders (MBES), like other sonar systems, transmit sound energy and analyse the return signal (echo) from the seabed or other objects. The sound waves are transmitted from a transducer mounted on the hull of the survey vessel (or ROV/AUV) to produce a fan-shaped coverage of the seabed. The coverage area on the seabed depends on the equipment used, the settings of the equipment and the depth of the water. Typically, coverage is two to four times the water depth (below the transducer). Sound emitted from MBES, including proposed operating frequency and source intensity, is summarised in Table 3-3.

3.6.2 Side scan sonar

Side scan sonar (SSS) is a hydro-acoustic technique. The sensor array comprises a set of transducers which are mounted on either side of a towfish or AUV. The transducers produce a high frequency acoustic signal (pulse) which is formed into the shape of a fan that sweeps the seabed. The return signal (echo) comprises acoustic energy reflected from the seabed and waterborne discontinuities. The strength of the return echo is continuously recorded, creating an ‘image’ of the ocean bottom which can be used to indicate variation in reflectivity (influenced by the texture and composition) of the seabed. Sound emitted from SSS, including proposed operating frequency and source intensity, is summarised in Table 3-3.

A variation to traditional SSS is synthetic aperture sonar, which uses information from a number of overlapping pulses along the track to digitally combine the received signals to create a virtual array significantly longer than the physical sonar, which improves resolution. Frequency and source intensity are the same as described in Table 3-3 for SSS. SSS may also use interferometric processing where the sonar has multiple rows in each transducer and can use the phase differencing between the received signals to produce bathymetry data.

3.6.3 Magnetometer

A magnetometer is used to detect ferrous materials on or buried under the seabed by measuring small variations in the earth's magnetic field. This is used to detect anchors, chains, buried pipelines or cables or identify other magnetic anomalies that may require further investigation. The magnetometer is a passive sensor that does not rely on generating a magnetic field but measures perturbations in the ambient total field

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strength in the environment. The sensor is typically towed behind the SSS. Multiple magnetometer sensors may also be used simultaneously in a towed array, called a gradiometer.

3.6.4 Sub-bottom profiler

SBPs are devices that convert electrical energy into acoustic energy. They produce an acoustic profile which extends from the seabed down to the limit of subsurface penetration. Geophysical surveys use a variety of profilers which operate at differing energy levels and are characterised by different dominant frequencies. Higher energy sources are needed to transmit the acoustic signals to greater depth, but they have correspondingly lower dominant frequencies which reduce the resolution of the resultant record. Hence, the type of profiler used depends on the nature of the substrate, penetration and resolution required. Typical SBP systems associated with the Petroleum Activity may include the following:

- Chirp/parametric sub-bottom profiler: A chirp system emits an acoustic signal that includes a sweep through a range of frequencies and amplitudes. The chirp system also acts as a receiver for the reflected signal. The chirp SBP may be hull mounted, contained in a towfish or fitted to an AUV. Parametric sub-bottom profilers combine two slightly different high frequencies transmitted simultaneously to create a low frequency pulse from the interference between the high frequency pulses. The low frequency pulse is comparable in frequency and amplitude to a chirp system but is focused in a narrow beam directed below the transducer.
- Boomer sub-bottom profiler: A boomer SBP system consists of two spatially separated units; the boomer plate acoustic source mounted within a catamaran, and a hydrophone receiver. These are both towed on the surface immediately astern of the vessel, usually on opposite sides. The boomer plate is an electro-mechanical transducer comprising an electrical coil adjacent to a metal plate. A shipboard power supply charges a capacitor which is discharged through the electrical coil causing a magnetic field to repel a metal plate. This energetic motion generates a broad band, high amplitude impulsive acoustic signal in the water column that is directed vertically downward. The hydrophone system consists of individual hydrophone elements located within neutrally buoyant synthetic hydrocarbon filled tubing (~5 L). They typically contain 8–12 hydrophone elements evenly spaced in a 2.5–4.5 m long, 25 mm diameter tube.
- Sparker sub-bottom profiler: A sparker system consists of two spatially separated units; the sparker array acoustic source mounted within a catamaran and a hydrophone receiver. These are both towed on the surface immediately astern of the vessel, usually on opposite sides. The sparker is an acoustic source which uses an electrical arc which momentarily vaporises water between positive and negative electrodes, producing an omni-directional acoustic pulse. The hydrophone system consists of individual hydrophone elements located within neutrally buoyant synthetic hydrocarbon filled tubing (~5 L). They typically contain 8–12 hydrophone elements evenly spaced in a 2.5–4.5 m long, 25 mm diameter tube.

3.6.5 Water sampling and profiling

3.6.5.1 Water sampling

Discrete water samples may be taken from desired water depths using for example a Niskin or Van Dorn water sampler. The samplers are deployed to the desired depth by hand or using a winch.

3.6.5.2 Water profiling

Water profiling can be used with a variety of sensors to establish for example: sound velocity, water temperature, conductivity, turbidity, pH and dissolved oxygen level, at differing depth through the water column. The profiler is lowered through the water column by hand or using a winch. After the desired depth is reached the profiler will be recovered to the deck and recorded data downloaded.

3.6.6 Subsea positioning systems

Positioning below the water surface is achieved using ultra short baseline (USBL) systems. This usually involves a vessel transceiver that sends an acoustic signal through the water column to a beacon which replies on a unique code. The position of the beacon relative to the vessel transceiver is calculated by computing the range to the beacon based on the reply time and computing the direction to the beacon by slight changes in the time of the arriving signal at different receive elements in the transceiver.

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Subsea vehicles may also be fitted with doppler velocity logs (DVLs) to further aid the positioning. A DVL uses an acoustic signal reflecting off the seabed to determine the speed of the vehicle by measuring the small frequency shift of the returning echo caused by the relative motion of the DVL with respect to the seabed. Inertial Navigation Systems (INS) are frequently used to further aid the subsea positioning. An INS uses accelerometers to measure the accelerations of a vehicle in 3 axis and the rotations around those axis to determine position changes. There are no acoustic emissions from an INS.

3.6.7 Underwater laser scanner

Underwater laser scanners use a laser to scan objects to form a point cloud model of a structure. The results are similar to MBES but with much higher point density. Underwater lasers can only scan over very short distances of a few metres as the water quickly absorbs and scatters the light.

3.6.8 Autonomous underwater vehicles

An AUV is a self-propelled immersible vehicle that tracks a programmed course. An AUV is not tethered to the survey vessel and typically returns to the vessel to change batteries, download data and receive mission planning (new course program). Typically, the vessel USBL system will be used to track the AUV during a dive and to communicate with the vehicle using acoustic telemetry. AUVs have options to include additional payloads such as synthetic aperture sonar, forward looking sonar, turbidity sensors, doppler velocity log and digital cameras.

3.6.9 Remotely operated vehicles

An ROV is a tethered underwater vehicle. ROVs can be fitted with various tools and are fitted with camera systems (still/video). Additional sensors may include, altimeter, doppler velocity log, laser scanners, manipulator use to take sediment or water samples, or pipe trackers to locate buried cables or pipes.

3.6.10 Geophysical equipment deployment

A survey vessel, together with a towfish and/or towed catamaran (Figure 3-5), will be used to deploy geophysical sources and collect data. An ROV or AUV may be deployed with a payload of applicable sensors. Proposed deployment methods are summarised in Table 3-4 and illustrated in Figure 3-2 and Figure 3-3. Depending on the method of deployment, geophysical sources can sit at a variety of locations within the water column (Table 3-5).

Table 3-4: Proposed geophysical survey equipment deployment method

Geophysical survey technique	AUV/ROV	Towfish	Towed catamaran	Hull mounted
MBES	✓			✓
SSS	✓	✓*		
Magnetometer	✓	✓		
USBL	✓**	✓**		✓**
SBP – chirp	✓	✓		✓
SBP – boomer			✓	
SBP – sparker			✓	

** Towfish can also attach several acoustic sources, including side scan sonar or chirp.*

*** USBL has a hull mounted or towed transceiver.*

Table 3-5: Proposed geophysical survey equipment deployment depth

Geophysical survey technique	AUV	Towfish	Towed catamaran	Hull mounted
Deployment depth	5–35 m above seabed (nominal)	10–20 m above seabed	Within 1 m of surface	Dependent on draft of vessel (~10 m)

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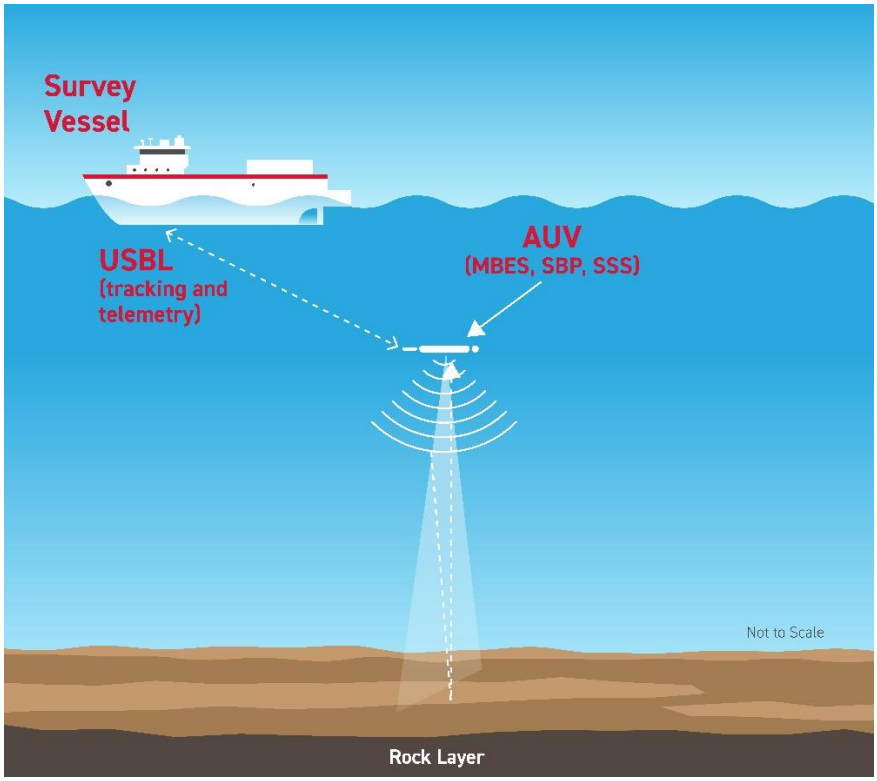


Figure 3-2: Deployment of geophysical equipment via autonomous underwater vehicle

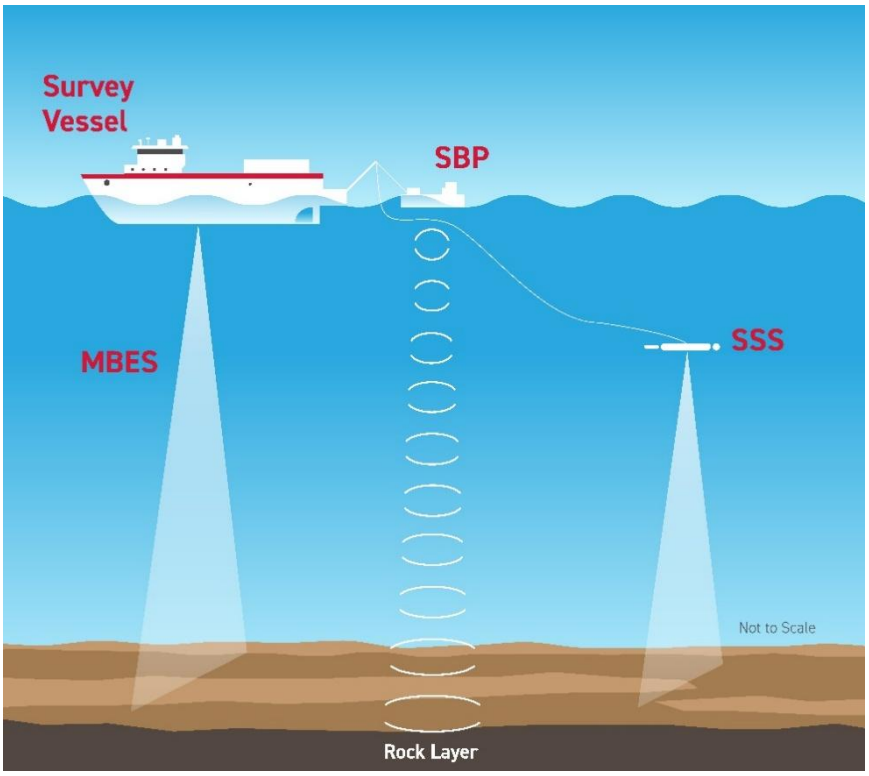


Figure 3-3: Deployment of geophysical survey equipment from a survey vessel

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3.7 Geotechnical surveys

The geotechnical surveys will be performed using standard industry equipment and will consist of in situ testing and the recovery of soil/rock samples at locations within the Operational Area to ground truth existing geophysical data and provide geotechnical data for engineering design.

The geotechnical survey methods that are expected to be used during the Petroleum Activity include but are not limited to:

- penetration testing
- cored borehole
- piston core /gravity core and vibrocore sampling
- box core and grab sampling.

Each of these methods are described in the following sub-sections.

3.7.1 Penetration testing

Penetration testing involves pushing a penetrometer (probe) into the seabed at a constant rate of penetration, and continuously measuring resistance, friction and pore pressure. The piezocone penetration test (PCPT/CPTu) is performed most frequently. In suitable seabed sediments, the cone penetrometer can be replaced with a T-bar penetrometer or ball penetrometer to continuously measure resistance, friction and pore pressure during both the push-in and pull-out phases of the test. Figure 3-4 shows the probes that may be used for the Petroleum Activity.

When the required final penetration depth is reached, all equipment is withdrawn from the seabed. A small hole will remain in the seabed, which will eventually collapse and infill as surface sediments move in the ocean current. The hole remaining in the seabed immediately after test completion will depend on the geometry of the type of penetrometer used:

- piezocone penetrometers: about 25–40 mm (diameter)
- T-bar penetrometers: a slot of about 40 mm × 250 mm
- ball penetrometers: about 56–133 mm (diameter).

PCPT testing will generally be undertaken to depths of between 3 m and 55 m below the mudline. Sub-seabed conditions in Operational Area may include cemented layers that prevent the penetration of the PCPT equipment to the required depth. Depending on the depth and thickness of any cemented layer, it may be necessary to continue the PCPT in order to investigate the conditions below. This would be done by drilling through the cemented layer and the diameter of the drilled hole would depend on the type of equipment used (80–225 mm) The section within a borehole subject to drilling would probably remain open but depending on the layer depth below seabed may eventually infill with the movement of surface sediments in ocean current.

PCPT testing may be undertaken using a remotely operated subsea frame positioned on the seabed and capable of continuously driving the probe to target depth or from a remotely operated subsea drilling rig as described in Section 3.7.2. Alternatively, the testing may be undertaken from the surface on a vessel, as described in Section 3.7.2.

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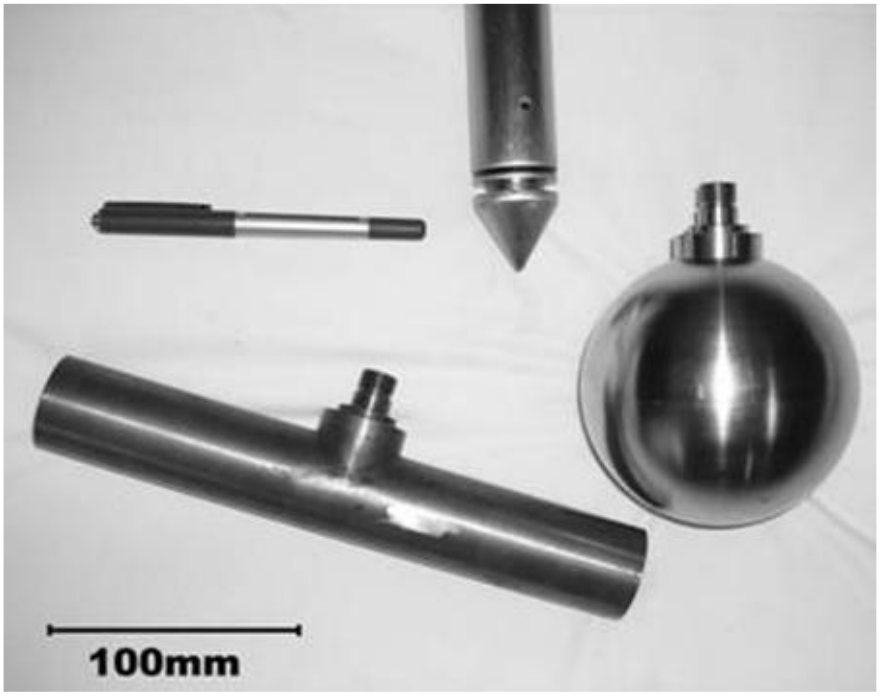


Figure 3-4: Examples of piezocone, T-bar and ball penetrometers

3.7.2 Cored borehole

Some boreholes will be required at the proposed mooring locations and proposed structure foundation sites to recover physical samples at greater depths than can be achieved using piston core sampling (Section 3.7.3). The equipment used to drill each borehole could involve drilling from the sea surface from a vessel (Figure 3-2), where drilling takes place through a riser spanning the water depth and which is slotted into a base frame located on the seabed (Figure 3-5). The drilling vessels generally have a length of <100 m and always have dynamic positioning capability.

The borehole is advanced by a combination of either core drilling or push sampling (thin or thick-walled tubes) at intervals or PCPT testing (Section 3.7.1), each interval. Boreholes will be drilled up to a maximum 50 m below mudline with a diameter up to ~225 mm. Where cemented layers are encountered, coring equipment is used to recover representative samples for those layers. In some cases, depending on the strength of the formation, the borehole may need to be stabilised by running sufficient casing to span the weak formation. Drilling mud is generally used in the process, in order to lubricate the drill bit, keep the borehole stable and hopefully preclude the necessity for casing. Seawater is the primary constituent of geotechnical drilling fluids. In suitable seabed sediments the base fluid (seawater) can be used as the drilling fluid. However, often one or more drilling fluid additives are mixed with the base fluid to produce a drilling fluid with the appropriate properties for the seabed conditions. The geotechnical survey would involve discharge of a small amount of drill cuttings and associated fluids to the marine environment at seabed level. The drill fluid additives will only be known after the contract is awarded and the specific type of seabed coring is confirmed. However, all drilling fluid products proposed by the geotechnical contractor will be assessed by Woodside using the Chemical Selection and Assessment Environment Guideline prior to approval for use.

The second case involves deploying a self-contained drilling unit to the seafloor rather than using a dedicated vessel. In this scenario there is no drill pipe between the vessel and the seafloor and only a combined lifting wire and umbilical runs from the drill unit up to the vessel. Apart from being remote from the vessel this is a similar operation where the drilling unit can provide either core samples or CPT investigations using a combination of drilling and pushing the CPT probe through the drill pipe.

The seafloor units typically use a smaller diameter pipe and do not always need the use of drilling mud.

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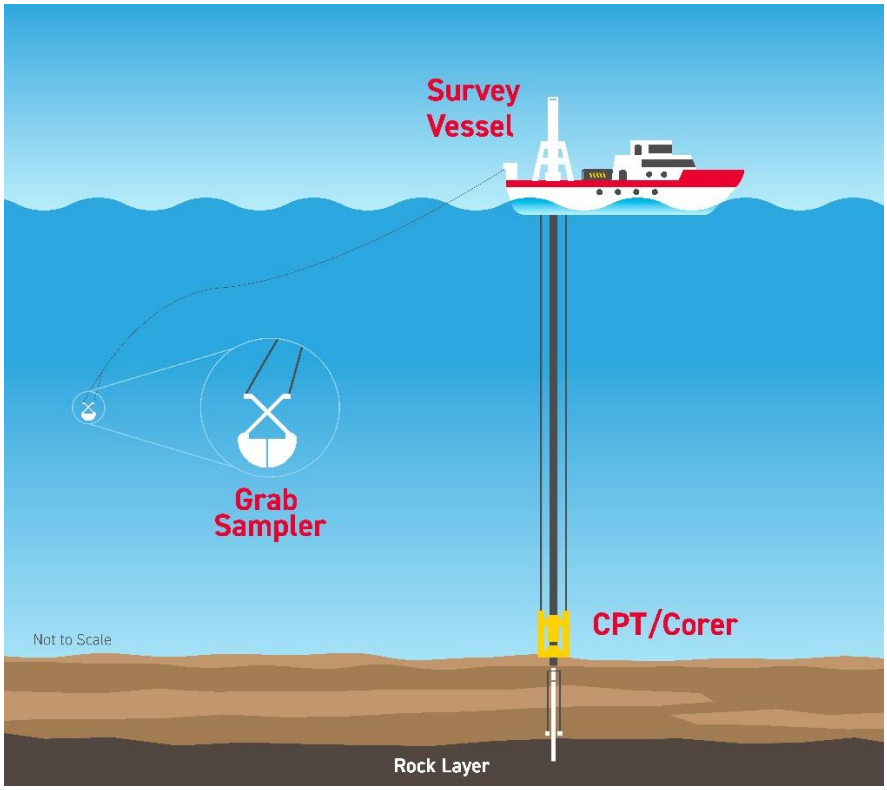


Figure 3-5: Geotechnical drilling and testing from a vessel

Source: Victoria State Government 2021

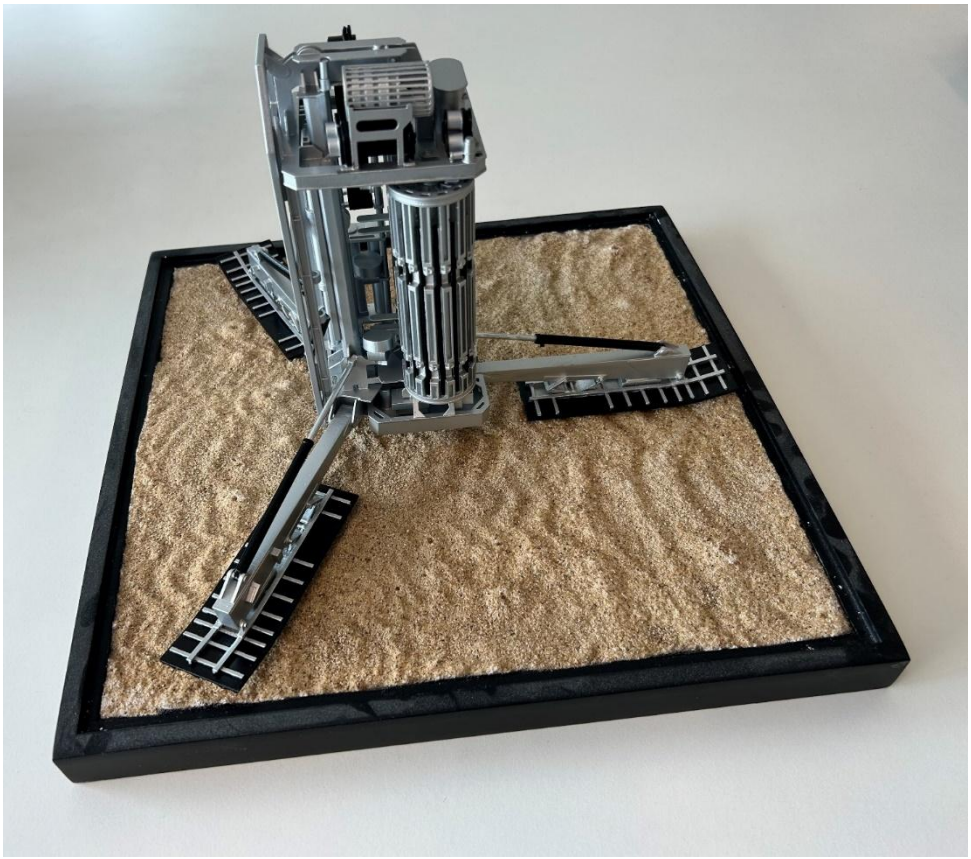


Figure 3-6: Model of a typical remote subsea drilling rig (not to scale)

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3.7.3 Piston core and vibrocore sampling

Piston coring is normally used on soft, unconsolidated sediments. A piston corer is lowered by wire rope to the seabed, at ~1 m/s so the duration of lowering and recovery operation is short (minutes at each site). It has a counterweight attached to a trigger device that contacts the seabed to release the corer allowing it to freefall a set distance and the momentum drives the core barrel into the seabed (Figure 3-7 and Figure 3-8). As the barrel enters the sediment, a special internal piston creates a vacuum and helps to draw the core into the barrel. This suction reduces compaction of the sample in the inner sleeve. Core catchers prevent the sediment from coming out of the coring tube. The leading edge of the coring tube is tapered to minimise disturbing the sample and seabed. Sampling itself is of short duration typically approximately 15 minutes at each location.

When the depth of sampler refusal is reached, all equipment is withdrawn from the seabed. A small hole will remain in the seabed, which if does not collapse immediately, will infill with time. Typically, the hole left in the seabed will be proportional to the geometry of the sample tube (i.e. typically 3 m depth by 110 mm diameter).

Piston core samples are typically 70–110 mm in diameter and 1–6 m in length (Figure 3-8).

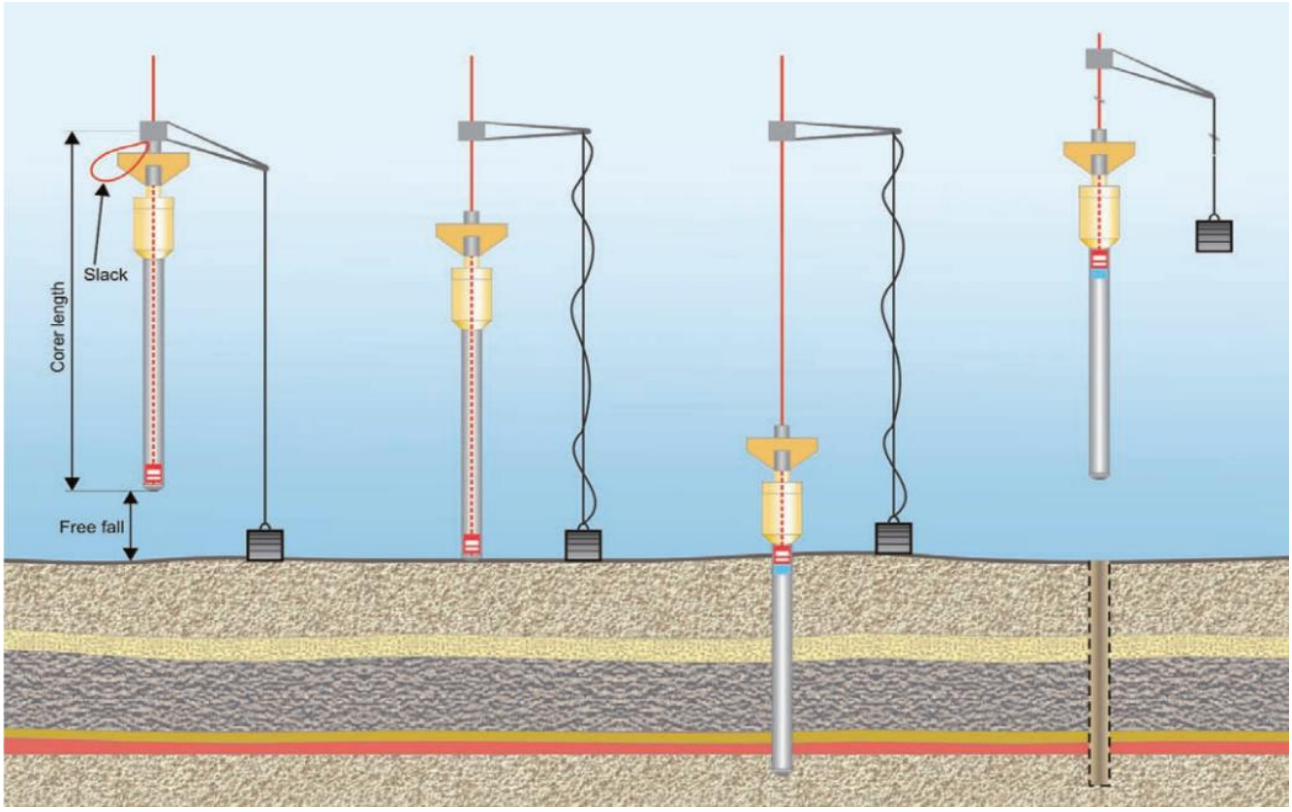


Figure 3-7: Example of a geotechnical piston corer

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Figure 3-8: Examples of geotechnical piston core sample tubes

A vibrocore achieves a similar sample to a piston core but rather than using free fall momentum to drive the core barrel into the seabed, a vibrocore uses a motor above the barrel to vibrate the corer and the weight helps drive the barrel into the sediment. The sample is typically more disturbed, but the method produces better seabed penetration in coarser sediments where a piston corer is of limited use.

3.7.4 Box core and grab sampling

Box core samplers (Figure 3-9) are designed to recover bulk, undisturbed samples of soft surficial material. Box dimensions of 0.5 m × 0.5 m × 0.5 m are typically used for offshore geotechnical surveys. The box corer is mounted on a frame, which is lowered to the seabed. A self-releasing trigger mechanism, initiated once the frame reaches the seabed, allows the box corer to penetrate into the seabed. Penetration is limited by a stopper to 0.5 m depth.

The volume of sample recovery is typically ~0.125 m³.

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Figure 3-9: Examples of box core samplers

3.8 Vessels

Three primary types of survey vessels may be used to complete the activities associated with the Petroleum Activity. These include:

- a multi-purpose survey vessel will be used that can conduct geophysical surveys, including ROV and AUV survey operations, and light geotechnical operations;
- a geotechnical drilling vessel for deeper geotechnical investigations; and
- uncrewed surface vessel (USV) which may replace a conventional vessel for numerous survey tasks over the life of the EP.

Unique risks to USVs are considered in the preparation of the EP.

Conservative details for three primary survey vessel types are provided in Table 3-6.

Table 3-6: Typical survey vessel parameters

Vessel type	Length (overall)	Max. persons onboard	Fuel type	Largest tank size
Multi-purpose survey vessel	65 m	40	Marine diesel	120 m³
Geotechnical drilling vessel	100 m	60	Marine diesel	185 m³
USV	24 m	Uncrewed	Marine diesel	75 m^3 (total onboard)

A conservative approach has been employed to select vessel parameters to assess the risks and impacts. It is feasible, although unlikely, that two vessels will perform surveys in the Operational Area at any one time.

Geotechnical drilling vessels are expected to hold station in the Operational Area using dynamic positioning (DP) and geophysical survey vessels and USVs may also require the use of DP although this is uncommon and if required it would only be only for short durations. No anchoring is planned within the Operational Area. A typical geotechnical drilling vessel is shown in Figure 3-10.

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All survey vessels are required to pass a Woodside marine assurance inspection audit (to audit compliance with safety management requirements and marine laws) and operate in accordance with Woodside's HSE policies.

The USVs are controlled from a remote operations centre (ROC) and are staffed 24 hours a day whilst the vessel is in transit or undertaking activities. Remote operators maintain situational awareness through an integrated camera system that provides 360-degree visual coverage around the vessel. Depending on the USV configuration, the camera system may include advanced features such as image stabilisation (motion correction), optical zoom, automatic target recognition and low-light or night-vision capability. These systems assist remote operators to safely navigate the vessel, monitor surrounding conditions, identify other vessels and floating hazards, and detect marine fauna.

Because there are no facilities to support human occupancy on USV's, emissions and discharges are typically limited to cooling water and combustion of marine diesel. The vessel is equipped with bilge monitoring systems to monitor the bilge tanks for hydrocarbons (such as leaks from engine machinery spaces or from marine diesel tanks), and where detected the bilge pumps will auto disable and the vessel will be required to return to port.

Vessels will mobilise and demobilise either from international waters or domestically from within Australia and will comply with the relevant maritime safety requirements and marine order requirements as appropriate for the vessel. Port calls may be required, to change crew or reconfigure the vessel to use different survey equipment (for example between the completion of the geophysical and commencement of the geotechnical surveys). No bunkering at sea will be performed as part of the Petroleum Activity. Any bunkering would be performed during a port call, out of the scope of this EP.

Vessels associated with the Petroleum Activity are to comply with this EP when they are within the Operational Area. When vessels associated with the Petroleum Activity are transiting to or from the Operational Area they are to comply with applicable maritime regulations, laws and other relevant requirements.



Figure 3-10: Typical geotechnical drilling vessel

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4. DESCRIPTION OF THE EXISTING ENVIRONMENT

4.1 Overview

In accordance with Regulations 21(2) and 21(3) of the Environment Regulations, this section describes the existing EMBA by the activity (planned and unplanned, 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 and/or socio-cultural 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 6.9.1.2. The EMBA also includes areas that are predicted to experience shoreline contact with hydrocarbons above threshold concentrations.

Woodside recognises that hydrocarbons may be visible at lower concentrations than the ecological impact thresholds defined in Table 4-1. These visible hydrocarbons have the potential to cause socio-cultural impacts. In respect of this, the EMBA also includes hydrocarbon thresholds where socio-cultural impact could occur. Receptors relevant to the socio-cultural hydrocarbon thresholds 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 hydrocarbon thresholds for surface hydrocarbons encompasses a wider area than 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 does not represent the predicted coverage of any one hydrocarbon spill nor depict a slick or plume at any particular point in time. Rather, the EMBA represents 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 environment that may be affected for surface and in-water hydrocarbons

Hydrocarbon type	Ecological hydrocarbon thresholds[1]	Socio-cultural hydrocarbon thresholds[1]	Planning area for scientific monitoring
Surface	10 g/m^2 This represents the minimum oil thickness (0.01 mm) at which ecological impacts (e.g. to birds and marine mammals) are expected to occur.	1 g/m^2 This represents a wider area where a visible sheen may be present on the surface and, therefore, the concentration at which socio-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.	
Dissolved	10 ppb The biological effects of hydrocarbons are driven by the fraction of hydrocarbons that are dissolved and therefore bioavailable to aquatic organisms. Toxicity studies show 10 ppb is protective of more than 95% of species for acute exposures, while still capturing the onset of effects in the most sensitive species and life stages (French-McCay 2026; Negri et al. 2021; Bejarano et al. 2017). 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 concentration value establishes the planning area for scientific monitoring within which further analysis can be undertaken to inform monitoring priorities. In the event of a spill, DNP will be notified of AMPs which may be contacted by hydrocarbons at this threshold Table 7-9.
Entrained	1000 ppb Entrained hydrocarbons have limited bioavailability as toxic effects are driven by the small soluble fraction		

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Hydrocarbon type	Ecological hydrocarbon thresholds[1]	Socio-cultural hydrocarbon thresholds[1]	Planning area for scientific monitoring
	(typically less than 1% of the oil mass) that dissolves into the water column (French-McCay 2026). As entrained hydrocarbons are within the water column and not visible, impacts to socio-cultural receptors are associated with ecological impacts. Therefore, entrained hydrocarbons at this threshold also represent the level at which socio-cultural impacts may occur.		
Shoreline	100 g/m^2 This represents the threshold that could impact the survival and reproductive capacity of benthic epifaunal invertebrates living in intertidal habitat.	10 g/m^2 This represents the volume where hydrocarbons may be visible on the shoreline but is below concentrations at which ecological impacts are expected to occur.	

1. *Further details including the source of the thresholds used to define the EMBA in this table are provided in Section 6.9.1.2.*

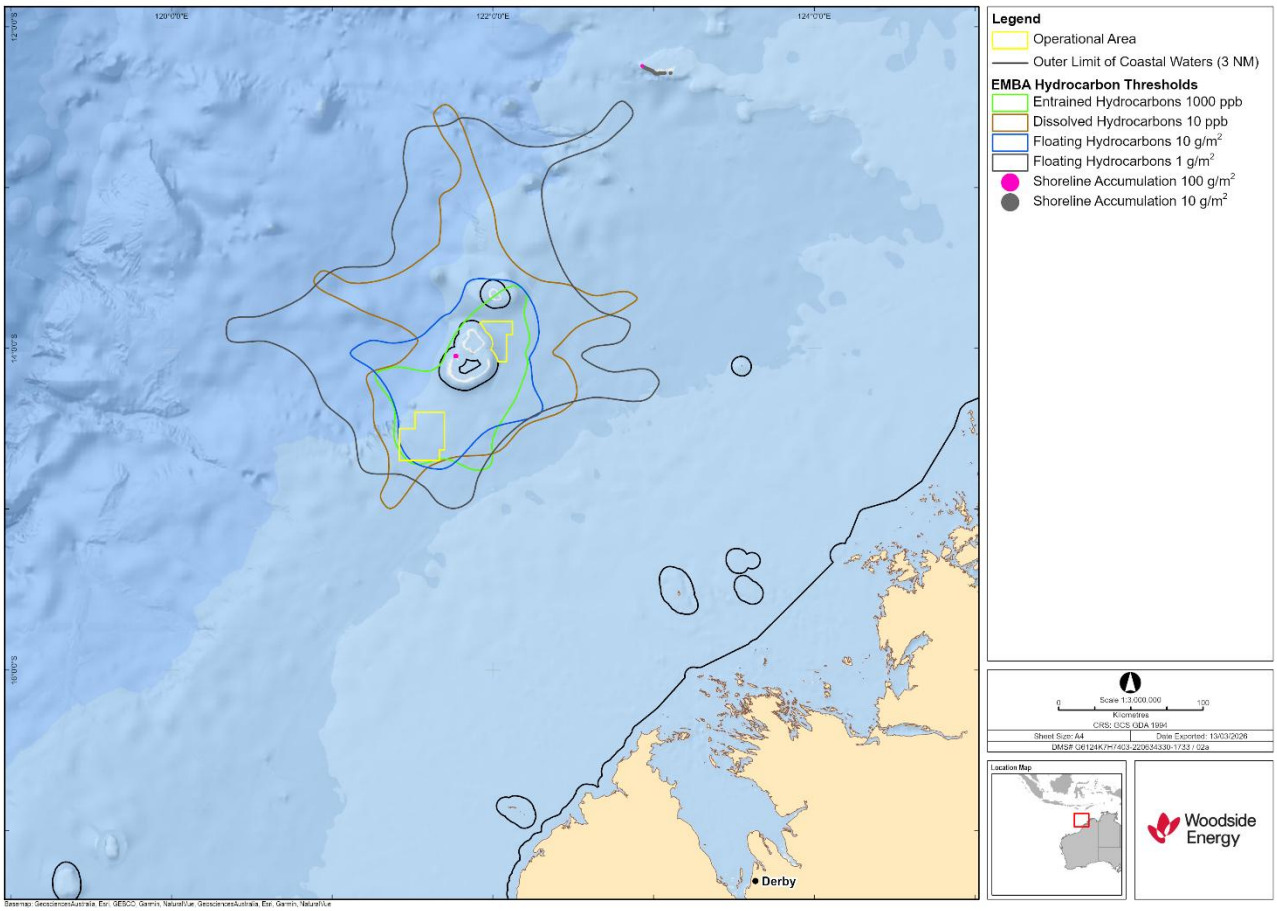


Figure 4-1: Environment that may be affected by the Petroleum Activity

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4.2 Regional context

The Operational Area is located in Commonwealth waters within the North-west marine region (NWMR)], as defined under the Integrated Marine and Coastal Regionalisation of Australia (IMCRA v4.0) (Department of Sustainability, Environment, Water Population and Communities [DSEWPAC] 2012), in water depths of ~ 350-900 m. Within the NWMR, the Operational Area lies within the Timor Province (Figure 4-2). Woodside's Master Existing Environment document provided in Appendix C summarises the characteristics for the relevant marine bio-regions.

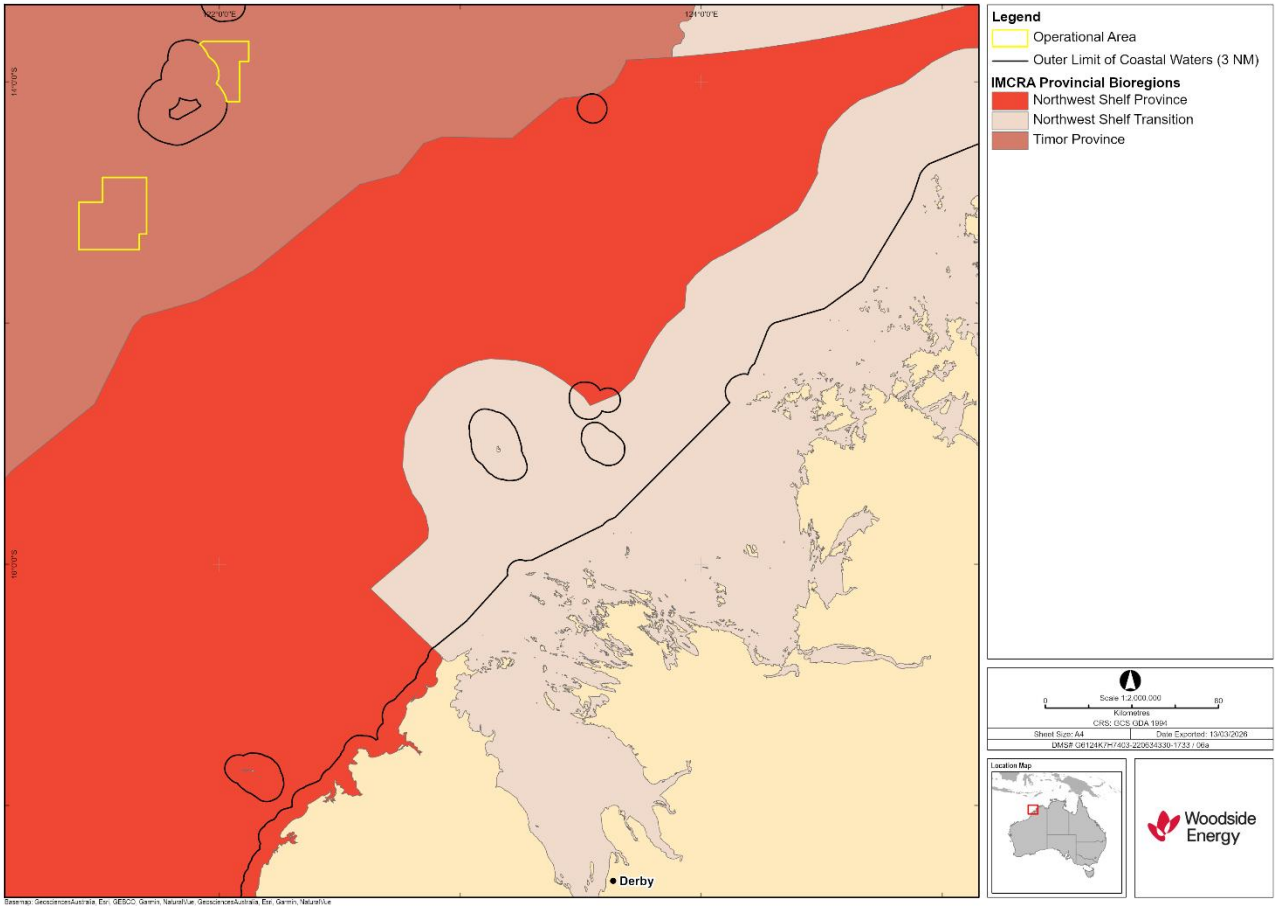


Figure 4-2: Location of the Operational Area and relevant marine bio-regions

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 × 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 Petroleum Activity on MNES, shapefiles (provided by the Commonwealth Department of Climate Change, Energy, Environment and Water [DCCEEW]) 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.

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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
	Area A (Torosa)	Area B (Brecknock Calliance)	
World Heritage Properties	0	0	0
National Heritage Places	0	0	0
Wetlands of International Importance (Ramsar)	0	0	1
Commonwealth Marine Area	1	1	5
Listed Threatened Ecological Communities	0	0	0
Listed Threatened Species	22	20	29
Listed Migratory Species	36	34	57

4.4 Physical environment

The Operational Area lies on the outer continental shelf in water depths within the range from ~ 350-900 m. The Operational Area for the Torosa field is located approximately 23 km from the nearest shoreline (Sandy Islet at Scott Reef).

The bathymetry within the Operational Area (Figure 4-3) is generally flat, which is consistent with the broader North West Shelf (NWS) Province shelf region (Baker et al. 2008). The seabed has a gentle (0.05°) seaward gradient extending to a steep distal slope occurring between 200 and 300 km offshore in water depths of ~200 m (Dix et al. 2005). The continental slope then descends more rapidly from the shelf edge to depths >1,000 m to the north-west (James et al. 2004).

The NWMR is characterised by expanses of continental shelf and slope, with complex areas of bathymetry such as plateaux, terraces and major canyons that facilitate upwelling of nutrients and sediment transport (Commonwealth of Australia (CoA) 2012). The continental shelf in the northern most part of the region (north of Cape Leveque) is described as a ‘rimmed ramp’, as the waters over the outer margins of the shelf are shallower than the middle portions (Commonwealth of Australia 2008). This ‘ramp’ is a unique feature of the Australian continental margin in this region, with the rim at its outer edge being the site of a number of coral reefs including Ashmore, Cartier, Scott and Seringapatam Reefs (CoA 2008).

The greatest water depths in the area occur to the west of Scott Reef. Scott Reef is an annular reef ~17 km long and 16 km wide, comprising two coral atolls (North Scott Reef and South Scott Reef) which is separated by a deep-water channel. The reef rises steeply from surrounding water depths of ~400–500 m (Fugro Survey Pty Ltd 2006; URS Australia Pty Ltd 2007a).

North Scott Reef contains a shallow lagoon ~20 m deep that connects to the surrounding ocean via two narrow channels. In contrast, South Scott Reef contains a larger, more open lagoon ranging from ~20–70 m in depth, supporting different habitat types (Gilmour et al. 2013).

Scott Reef is one of the largest emergent reef systems in the North West Marine Region (NWMR) and overlies part of the Torosa reservoir. At high tide, only a small section of the reef system on the north-western edge of South Scott Reef, known as Sandy Islet, remains exposed. The surrounding seabed reflects the broader deep-water environment of the Project Area, with a gentle gradient of ~0.1° and water depths generally between 400 and 500 m. The Scott Reef Complex lies across both Commonwealth and State waters and includes the Scott Reef Nature Reserve.

Seringapatam Reef is a continental shelf atoll which forms part of a KEF with Scott Reef; Seringapatam Reef and Commonwealth waters in the Scott Reef Complex (Seringapatam Reef is an emergent coral reef, but unlike Scott Reef has no permanent island or islet. The reef is characterised by a combination of physical environmental conditions including clear, warm waters typical of oceanic environments and a large tidal range that provides a high physical energy input to these remote reef marine ecosystems.

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The physical characteristics of the environment within the Operational Area and EMBA is described within the Master Existing Environment document in Appendix C.

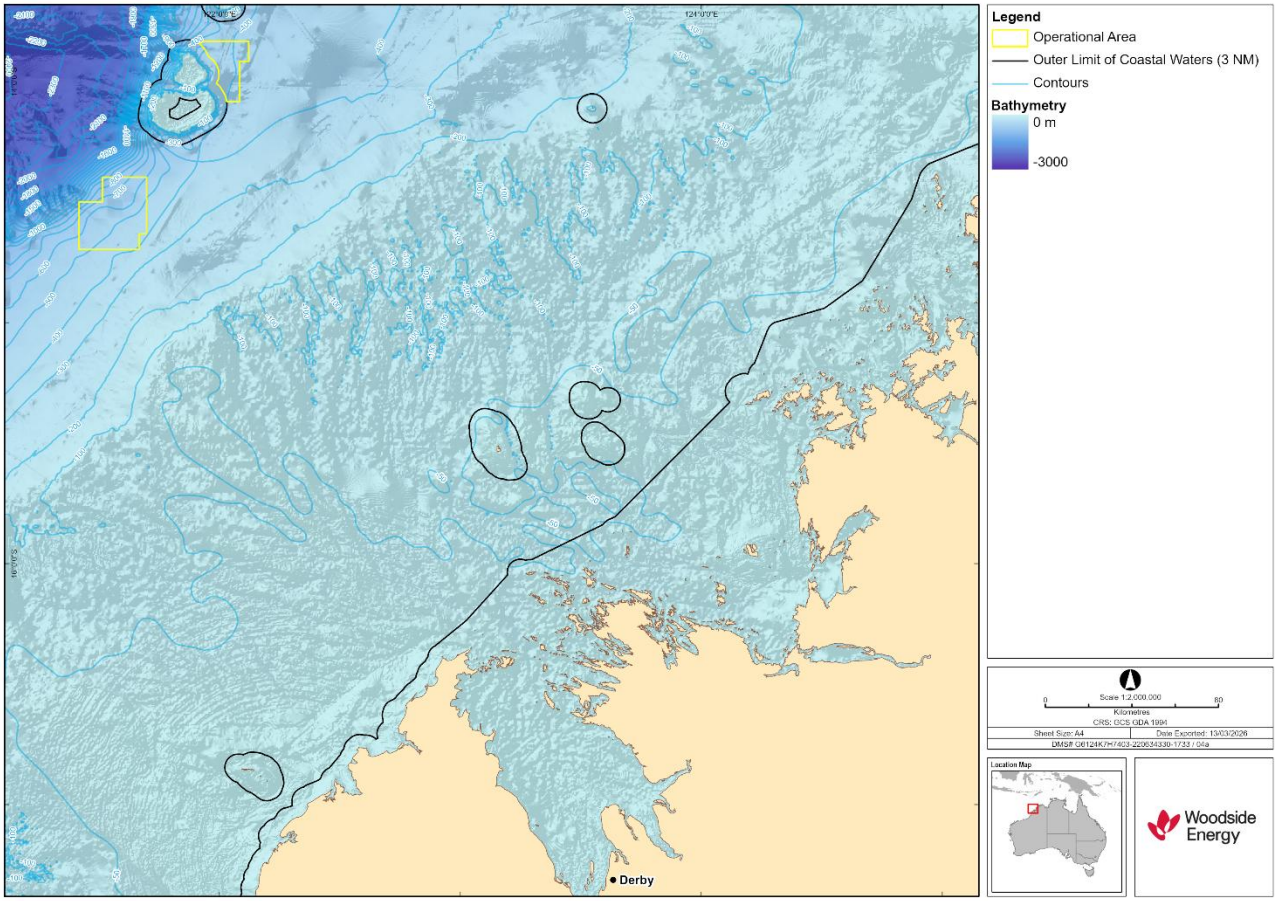


Figure 4-3: Bathymetry of the Operational Area

4.5 Habitats and biological communities

Sediments across the outer North West Shelf (NWS) Province are relatively homogeneous and are typically dominated by sands with minor gravel (Baker et al. 2008). Finer sediments (e.g. muds) become more common closer to the shoreline and shelf break but are less prominent across the intervening continental shelf (Baker et al. 2008). Sediments are predominantly carbonate in composition, consisting of both biogenic and precipitated material on the outer shelf (Dix et al. 2005). Several reef systems occur along the outer shelf and slope of the North West Marine Region, including Ashmore, Cartier, Scott and Seringapatam reefs (Baker et al. 2008).

Surveys conducted in 2007 across 13 sites between Barrow Island and Ashmore Reef (100–1,000 m depth) found that continental slope habitats (around 400 m) were dominated by soft, muddy sediments supporting sparse epifauna (Williams et al. 2010). Sessile fauna included isolated crinoids, anemones, glass sponges and sea pens, while mobile fauna comprised echinoderms (urchins, holothurians and sea stars) and decapod crustaceans such as prawns and crabs. Similar assemblages occurred at depths of 700–1,000 m. Across the broader NWS, benthic habitats generally consist of unconsolidated carbonate sediments supporting sparse deposit- and filter-feeding communities, including glass sponges, bryozoans, gorgonians, hydroids, echinoderms and crustaceans (URS 2010; AIMS 2014). Infaunal communities, particularly polychaetes, are also widespread in soft sediment habitats along the continental shelf and upper slope (Brewer et al. 2007; RPS 2012). The deepwater habitats surrounding the Scott Reef system overlying the Torosa Field generally comprise soft sediment seabed areas with sparse benthic biota.

Seabed sediments were also investigated as part of benthic surveys by Gardline Marine Services Pty Ltd (2009a) in the Browse Development Area (Figure 4-4). Sediment quality data were assessed against the revised ANZECC and ARMCANZ sediment guideline values (Simpson et al. 2013). Although these data

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were collected 13–15 years ago, they remain representative of current conditions due to the remoteness of the area, minimal anthropogenic inputs and the generally low variability of sediment quality parameters in deep-water environments. Sediments at the Brecknock, Calliance and Torosa reservoirs were predominantly soft silt and clay, with localised areas of sand and stiff, hard or cemented material (Fugro Survey Pty Ltd 2006; Gardline Marine Services Pty Ltd 2009).

No hydrocarbon contamination was detected in seabed sediment samples from the Browse Development Area. Nutrient concentrations were generally within natural ranges, although elevated total nitrogen was recorded near the Brecknock and Calliance reservoirs. Metal concentrations were largely below Australian and New Zealand sediment quality guideline trigger levels, with only minor exceedances for nickel and mercury at a small number of sites.

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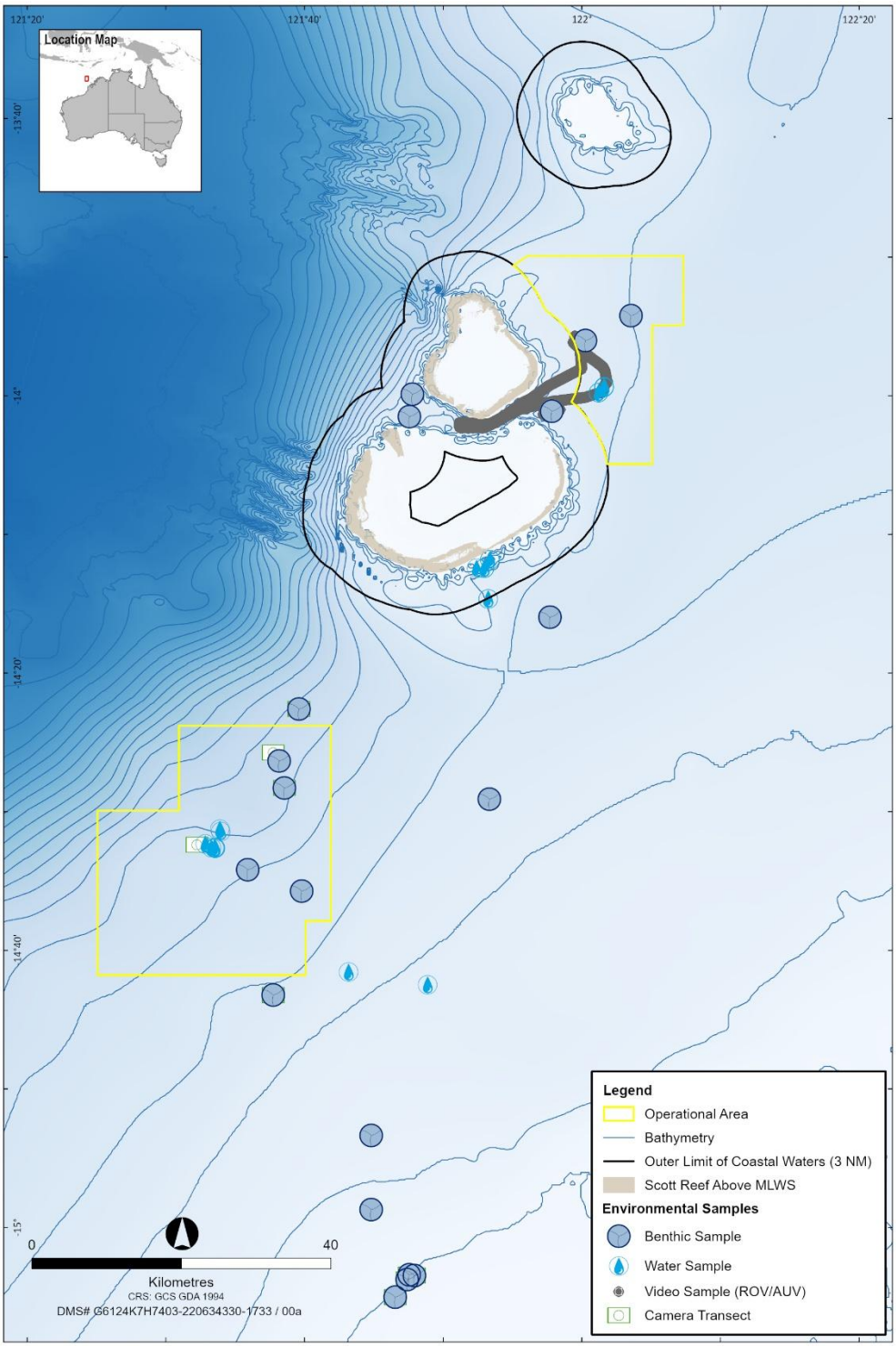


Figure 4-4: Historical environmental sampling locations relevant to Operational Area

Hard substrate may occur within the EMBA within the ancient coastline at 125 m depth contour key ecological feature (KEF) (Section 4.7), which overlaps the EMBA.

Key habitats and ecological communities within the EMBA are briefly described and identified in Table 4-3. A full description of the habitats and ecological communities is contained within the Master Existing Environment document provided in Appendix C.

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Table 4-3: Habitats and communities within the environment that may be affected (distance calculated from Operational Area)

Habitat/ community	Description	Key locations within the EMBA
Seabed characteristics		
Continental Slope Demersal Fish Communities KEF	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 slope of the Timor Province and the Northwest Transition also contains >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.	• Overlaps Operational Area Part B
Seringapatam Reef and Commonwealth waters in the Scott Reef Complex	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). 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).	• Overlaps Operational Area Part A
Ashmore Reef and Cartier Island and surrounding Commonwealth waters	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 >100 m, the reef platform is at the edge of the NWS and covers an area of 239 km². 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.	• Within EMBA. • ~196 km north-east from Operational Area Part A • ~274 km north-east from Operational Area Part B
Ancient coastline at 125 m depth contour	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. The ancient coastline is not continuous throughout the NWMR and coincides with a well-documented eustatic stillstand at ~130 m depth worldwide (Falkner et al. 2009). Where the ancient coastline provides areas of hard substrate, it may contribute to higher diversity and enhanced species richness relative to soft sediment	• Within EMBA. • ~74 km south-east from Operational Area Part A • ~37 km south-east from Operational Area Part B

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Habitat/ community	Description	Key locations within the EMBA
	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. 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).	
Marine primary producers		
Coral	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. These reef types include oceanic atolls such as Scott Reef and Seringapatam Reef (located within the EMBA), fringing reefs surrounding offshore islands such as Browse Island and along sections of the Kimberley coastline, and submerged shoals on the North West Shelf (NWS) including Rankin Bank and Glomar Shoal (Veron and Marsh 1988). The scleractinian corals (light dependent), which are found to a maximum depth of 60 m , are the keystone species of the coral communities within the Scott Reef system which are considered to be of high conservation and ecological value. Within the deeper waters of the Operational Area (i.e. seabed habitats excluding Scott Reef), environmental surveys did not record the presence of deepwater soft or hard corals (Gardline Marine Services Pty Ltd 2009a; Hudson and Fletcher 2006).	• Scott Reef (5.5 km west of Operational Area Part A) • Seringapatam Reef (19 km NNE of Operational Area Part A) • Ashmore Reef (197 km north-north-east of Operational Area Part A)
Seagrass beds and macroalgae	Seagrass beds and benthic macroalgae provide important habitat, nursery areas and food sources for marine fauna (Heck et al. 2003; Wilson et al. 2010). In northern Western Australia, these habitats are largely restricted to sheltered shallow waters around reef systems due to high tidal ranges, turbidity, seasonal freshwater runoff and cyclones. Across the North West Marine Region (NWMR), seagrass coverage is generally sparse. Ashmore Reef supports the largest recorded area (~2% cover), although dense seagrass (>10% cover) is limited (Skewes et al. 1999b; Brown and Skewes 2005). Smaller areas occur at Cartier Island and Seringapatam Reef, dominated primarily by *Thalassia hemprichii* and *Halophila ovalis*, while no seagrass has been recorded at Browse Island or Hibernia Reef (Skewes et al. 1999b). Scott Reef supports five seagrass species, with *Thalassia hemprichii* the most abundant. Seagrasses occur mainly in shallow waters, generally <15 m deep, covering ~23 ha (0.22%) at North Scott Reef and 77 ha (0.54%) at South Scott Reef (URS Australia Pty Ltd 2006a; Skewes et al. 1999b). No seagrass was recorded	• Scott Reef (5.5 km west of Operational Area Part A) • Seringapatam Reef (19 km NNE of Operational Area Part A) • Ashmore Reef (197 km north-north-east of Operational Area Part A)

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Habitat/ community	Description	Key locations within the EMBA
	at depths >15 m or in deeper lagoon and outer reef habitats (>40 m) (URS 2007a, 2007b). Macroalgal growth within the deep waters of the Project Area is limited by low light availability and soft sediment habitats. Seabed surveys recorded no macroalgal beds within the development area; however, shallow and intertidal areas at Scott Reef support variable algal cover averaging 5–10% (WAM 2009).	
Other communities and habitats		
Plankton	Plankton within the Operational Area and EMBA are expected to be representative of the wider NWMR as detailed in Section 4.3 of the Master Existing Environment document provided in Appendix C. 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). Further detail regarding productivity at other notable locations within the EMBA is provided in the Master Existing Environment document provided in Appendix C.	Phytoplankton within the EMBA is expected to reflect the distribution and abundance of the NWMR, refer to the Master Existing Environment document in Appendix C.
Pelagic and demersal fish populations	Pelagic and demersal fish populations within the three operational area and EMBA are expected to be representative of the NWMR (described in the Master Existing Environment document, Section 6.2 [Appendix C]). 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) and the Continental Slope Demersal Fish Communities KEF (which is mapped as overlapping Operational Area Part B). Detail regarding these features is provided in the Master Existing Environment document provided in Appendix C.	Fish populations within the EMBA are expected to reflect the distribution and abundance of the NWMR, refer to the Master Existing Environment document in Appendix C.
Epifauna and infauna	The offshore environment of the NWMR comprises predominately of seabed habitats dominated by soft sediments (sandy and muddy substrata with occasional patches of coarser sediments) and sparse benthic biota. The benthic communities inhabiting the predominantly soft, fine sediments of the offshore habitats are characterised by infauna such as polychaetes, and sessile and mobile epifauna such as crustacea (shrimp, crabs and squat lobsters) and echinoderms (starfish, cucumbers). The density of benthic fauna is typically lower in deep-sea sediment habitats (>200 m) than in shallower coastal sediment habitats, but the diversity of communities may be similar. 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.	Epifauna and infauna within the EMBA is expected to reflect the distribution and abundance of the NWMR, refer to the Master Existing Environment document in Appendix C.

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4.6 Protected species

A total of 66 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 report(s) is provided in Appendix D. The PMST report is 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. One conservation dependent species 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 4-13. Figure 4-5 to Figure 4-12 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 the Master Existing Environment document in Appendix C.

4.6.1 Fish, sharks and rays

A total of 12 EPBC Act listed threatened and migratory fish species have been identified to potentially occur within the EMBA, of which 9 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 4-5 and in Table 4-4. The Operational Area do not overlap any BIAs for fish, sharks and rays (Figure 4-5, Table 4-4).

Further description of BIAs is provided in the Master Existing Environment document in Appendix C.

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

Species name	Common name	EPBC Act (as per PMST report Appendix D)		Potential for interaction		
		Threatened status	***Migratory status***	***Operational Area Part A***	***Operational Area Part B***	***EMBA***
Carcharodon carcharias	White Shark, Great White Shark	Vulnerable	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area
Pristis pristis	Largetooth Sawfish. Freshwater Sawfish	Endangered	Migratory	X	X	Species or species habitat may occur within area
Pristis zijsron	Green Sawfish	Vulnerable	Migratory	X	X	Species or species habitat likely to occur within area
Rhincodon typus	Whale Shark	Vulnerable	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area	Foraging, feeding or related behaviour likely to occur within area Species or species habitat may occur within area
Sphyrna lewini	Scalloped Hammerhead	Conservation Dependent	N/A	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
Anoxypristis cuspidata	Narrow Sawfish, Knifetooth Sawfish	N/A	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area
Carcharhinus longimanus	Oceanic Whitetip Shark	N/A	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area
Carcharias taurus	Grey Nurse Shark	N/A	Migratory	X	X	Species or species habitat may occur within area

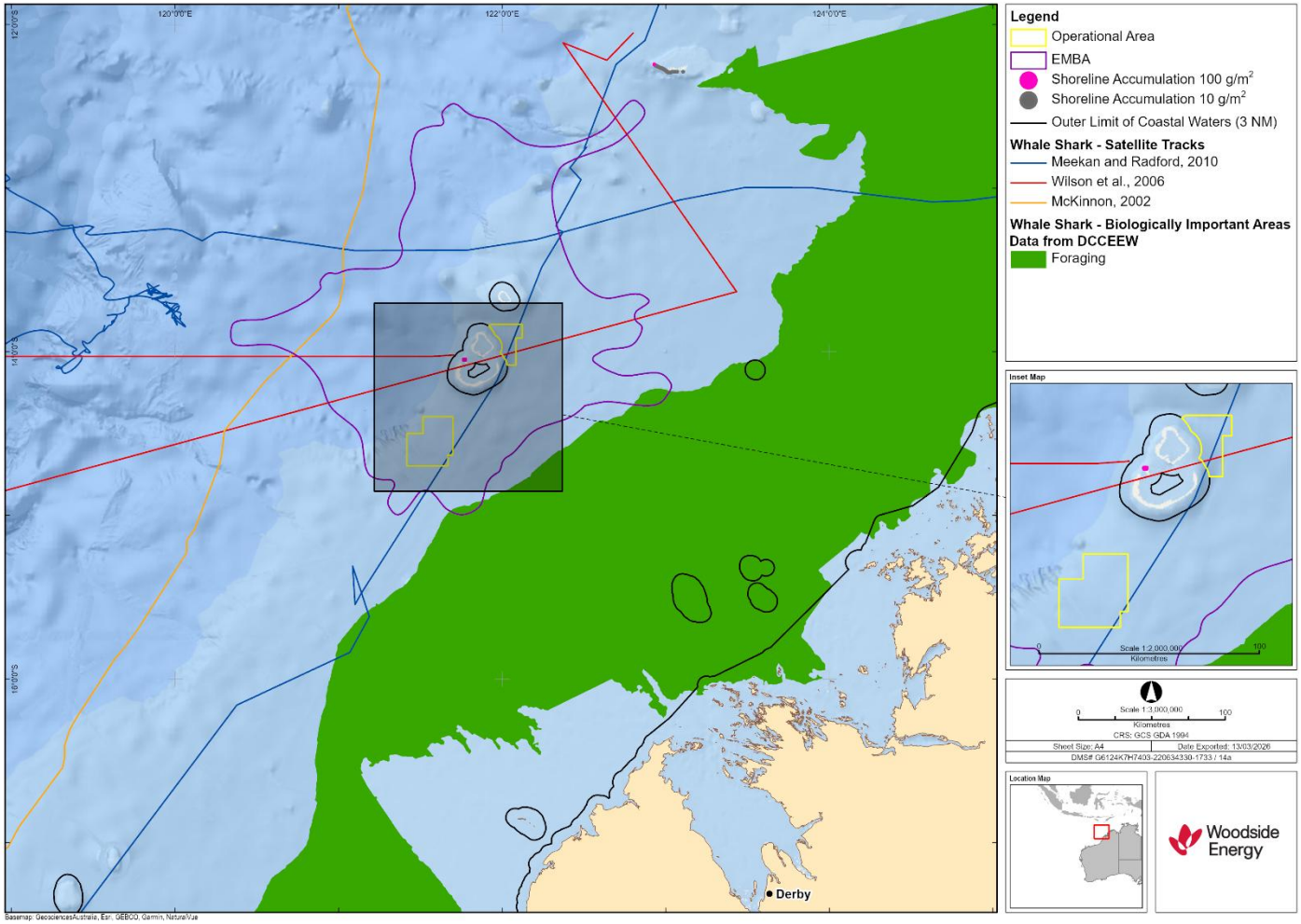
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Species name	Common name	EPBC Act (as per PMST report Appendix D)		Potential for interaction		
		Threatened status	***Migratory status***	***Operational Area Part A***	***Operational Area Part B***	***EMBA***
Isurus oxyrinchus	Shortfin Mako, Mako Shark	N/A	Migratory	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
Isurus paucus	Longfin Mako	N/A	Migratory	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
Mobula alfredi	Reef Manta Ray, Coastal Manta Ray	N/A	Migratory	Species or species habitat likely to occur within area	X	Species or species habitat likely to occur within area
Mobula birostris	Giant Manta Ray	N/A	Migratory	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area

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

Species	BIA type	Approx. distance / direction of BIA from Operational Area Part A (km)	Approx. distance / direction of BIA from Operational Area Part B (km)
Whale Shark	Foraging	63 km	30 km

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Figure 4-5: Whale shark BIAs overlapping the EMBA and tagged whale shark satellite tracks

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4.6.2 Marine reptiles

A total of 9 EPBC Act listed threatened and migratory marine reptile species have been identified to potentially occur within the EMBA, of which 7 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 4-6 and Table 4-4. Habitat critical overlapping the EMBA is presented in Figure 4-7 and Table 4-8. The Operational Area does not overlap any BIAs for marine reptiles. Operational Area Part A is in close proximity but does not overlap habitat critical for the Green Turtle (Figure 4-6, Table 4-7; Figure 4-7, Table 4-8). Woodside notes that the spatial extent of habitat critical to survival of green turtles around Sandy islet presented in Figure 4-7 differs from the broader area identified as habitat critical to survival in the DCCEEW Protected Matters Search Tool, however it does not align with the definition of internesting habitat under the Recovery Plan for Marine Turtles in Australia, as Scott Reef itself is not a nesting location. The close proximity of this habitat to the Operational Area has been considered in the impact assessment.

The seasonal sensitivities for turtle BIAs that overlap the 20 km light buffer are presented in

Table **4-9**.

Hawksbill turtles have been excluded from the seasonal sensitivities table as although Scott Reef is identified as an area that supports hawksbill turtle nesting in the Recovery Plan, Sandy Islet is not listed as an important nesting area for this stock in the Recovery Plan or a nesting and internesting area identified as habitat critical to the survival of a species. It is also not included in the dataset of nesting sites in Australia and surrounding regions, as presented in the Recovery Plan.

A single hawksbill turtle was tagged (2006) and recaptured (2009) on Sandy Islet by Guinea (2009). During this survey, there were no other reports of hawksbill tracks on Sandy Islet (Guinea, 2009). In subsequent surveys in 2010 and 2011, there was no evidence (tracks, turtles or hatchlings) of hawksbill turtle nesting on Sandy Islet (Guinea, 2010; 2011). There are no other records of hawksbill turtles nesting at Scott Reef. Although there have been observations of some hawksbill turtle nesting at Sandy Islet, is it not considered to be an important nesting area for the Western Australia stock or other stocks in Australia.

Further description of BIAs is provided in the Master Existing Environment document in Appendix C.

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

Species name	Common name	EPBC Act (as per PMST report Appendix D)		Potential for interaction		
		Threatened status	***Migratory status***	***Operational Area Part A***	***Operational Area Part B***	***EMBA***
Aipysurus fuscus	Dusky Sea Snake	Endangered	N/A	Species or species habitat known to occur within area	X	Species or species habitat likely to occur within area
Caretta caretta	Loggerhead Turtle	Endangered	Migratory	Foraging, feeding or related behaviour likely to occur within area	Foraging, feeding or related behaviour likely to occur within area	Foraging, feeding or related behaviour likely to occur within area
Chelonia mydas	Green Turtle	Vulnerable	Migratory	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	Breeding likely to occur within area
Dermochelys coriacea	Leatherback Turtle, Leathery Turtle, Luth	Endangered	Migratory	Foraging, feeding or related behaviour likely to occur within area	Foraging, feeding or related behaviour likely to occur within area	Foraging, feeding or related behaviour likely to occur within area
Eretmochelys imbricata	Hawksbill Turtle	Vulnerable	Migratory	Foraging, feeding or related behaviour likely to occur within area	Foraging, feeding or related behaviour likely to occur within area	Foraging, feeding or related behaviour likely to occur within area
Lepidochelys olivacea	Olive Ridley Turtle, Pacific Ridley Turtle	Endangered	Migratory	Foraging, feeding or related behaviour likely to occur within area	Foraging, feeding or related behaviour likely to occur within area	Foraging, feeding or related behaviour likely to occur within area
Natator depressus	Flatback Turtle	Vulnerable	Migratory	Foraging, feeding or related behaviour likely to occur within area	Foraging, feeding or related behaviour likely to occur within area	Foraging, feeding or related behaviour likely to occur within area
Aipysurus apraefrontalis	Short-nosed Sea Snake, Short-nosed Seasnake	Critically Endangered	N/A	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
Aipysurus foliosquama	Leaf-scaled Sea Snake, Leaf-scaled Seasnake	Critically Endangered	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area

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Table 4-7: Marine turtle BIAs within the EMBA

Species	BIA type	Approx. distance / direction of BIA from Operational Area Part A (km)	Approx. distance / direction of BIA from Operational Area Part B (km)
Green Turtle	Foraging (Ashmore Reef)	200 km north	275 km north-east
	Reproduction (Scott Reef)	1.5 km west	15 km north
	Reproduction (Ashmore Reef)	180 km north-east	257 km north-east
Hawksbill Turtle	Foraging (Ashmore Reef)	199 km north-east	275 km north-east
	Reproduction (Sandy Islet)	3 km west	17 km north
	Reproduction (Ashmore Reef)	181 km north-east	257 km north-east

Table 4-8: Marine Turtle habitat critical to the survival of the species predicted to occur within the EMBA

Species	Location of habitat critical	Approx. distance / direction from Operational Area Part A (km)	Approx. distance / direction from Operational Area Part B (km)
Green turtle	Nesting (Scott Reef)	1.5 km west	15 km north
	Nesting (Ashmore Reef)	176 km north-east	253 km north-east

Table 4-9 Key seasonal sensitivities for marine reptiles that overlap the Operational Area 20 km light buffer

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Marine Turtle Nesting [note: hatchling emergence is generally 6–8 weeks post-nesting activity]												
Green Turtle (Scott Reef-Browse Island Stock) (G-ScBr)[1]												

	Species may be present in the Operational Area 20km Light buffer
	Peak period. Presence of animals is reliable and predictable each year
	Shoulder period.

References for species seasonal sensitivities:

Green turtle nesting Scott Reef-Browse Island Stock November–March (CoA 2017).

Surveys of the Sea Snakes and Sea Turtles on Reefs of the Sahul Shelf (Guinea, 2013).

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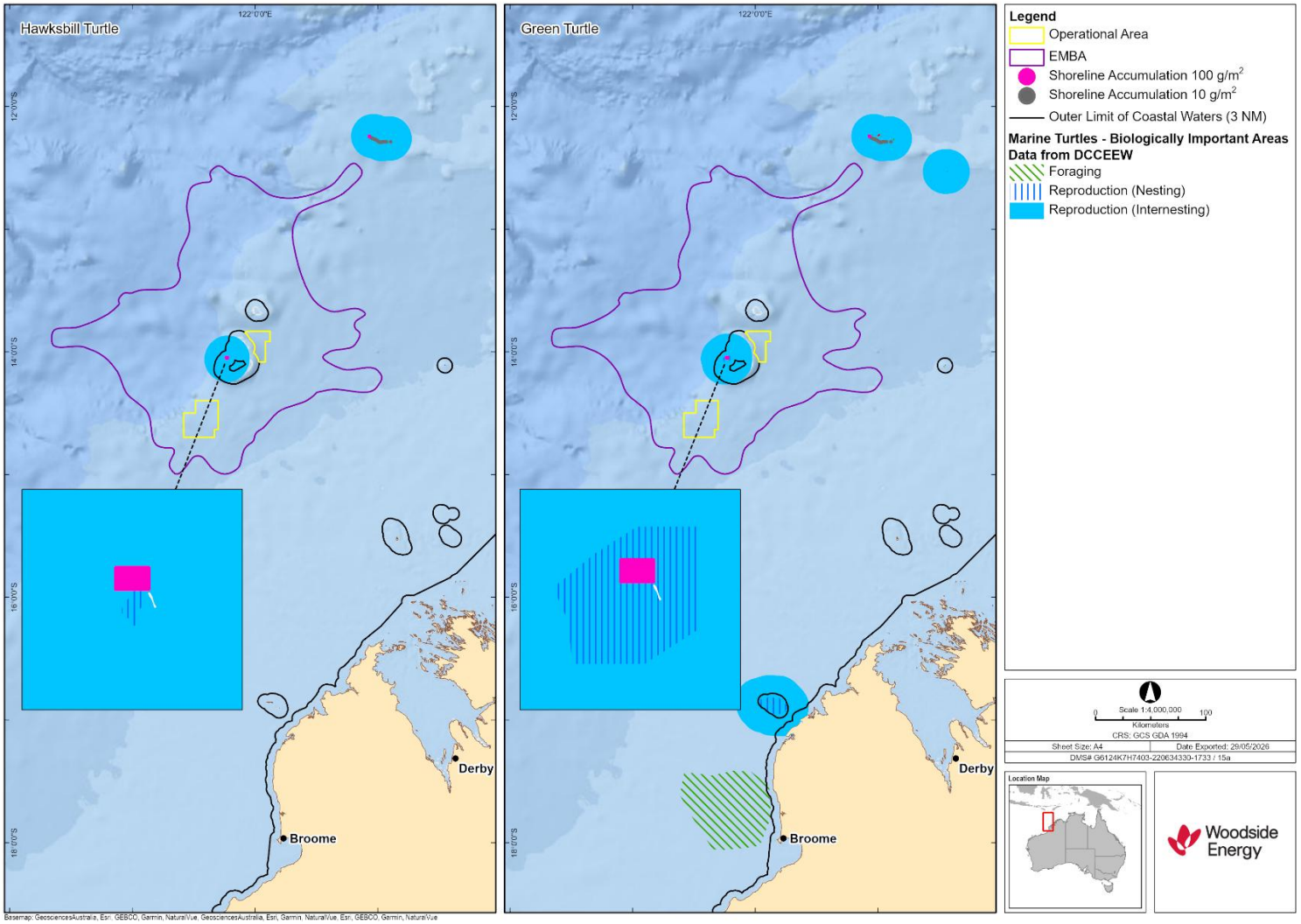


Figure 4-6: Marine reptile BIAs overlapping the EMBA

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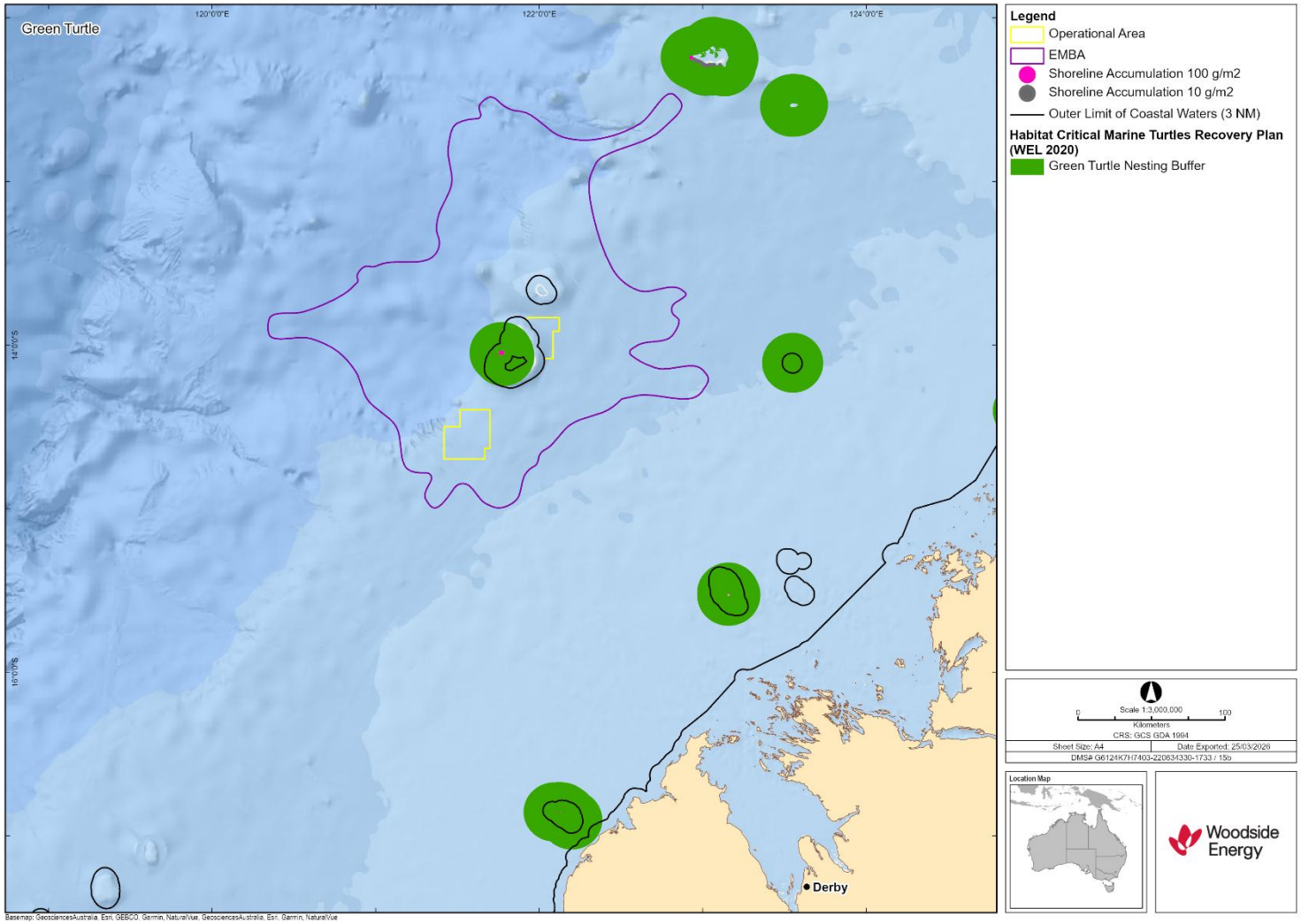


Figure 4-7: Habitat critical to the survival of marine turtles overlapping the EMBA

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4.6.3 Marine mammals

A total of 10 EPBC Act listed threatened and migratory marine mammal species have been identified to potentially occur within the EMBA, of which 9 occur in the Operational Area (Table 4-10). 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 4-11, Figure 4-8, and Figure 4-9. The Operational Area overlap the foraging, resting and migration BIAs for the Pygmy Blue Whale (PBW) (Table 4-11, Figure 4-8, and Figure 4-9).

Further description of BIAs is provided in the Master Existing Environment document in Appendix C.

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Table 4-10: Threatened and migratory marine mammal species predicted to occur within the Operational Area and EMBA

Species name	Common name	EPBC Act (as per PMST report Appendix D)		Potential for interaction		
		Threatened status	***Migratory status***	***Operational Area Part A***	***Operational Area Part B***	***EMBA***
Balaenoptera borealis	Sei Whale	Vulnerable	Migratory	Species or species habitat may occur within area[3]	Species or species habitat may occur within area[5]	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus	Blue Whale	Endangered	Migratory	Migration route known to occur within area	Migration route known to occur within area	Migration route known to occur within area
Balaenoptera physalus	Fin Whale	Vulnerable	Migratory	Foraging, feeding or related behaviour likely to occur within area	Foraging, feeding or related behaviour likely to occur within area	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni	Bryde's Whale	N/A	Migratory	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
Balaenoptera omurai	Omura's Whale	N/A	Migratory	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
Megaptera novaeangliae	Humpback Whale	N/A	Migratory	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
Orcinus orca	Killer Whale, Orca	N/A	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area
Physeter macrocephalus	Sperm Whale	N/A	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area
Tursiops aduncus (Arafura/ Timor Sea populations)	Spotted Bottlenose Dolphin (Arafura/ Timor Sea populations)	N/A	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area

[3] *PMST reports list Sei whale as 'Foraging, feeding or related behaviour likely to occur within area'. Woodside has undertaken marine fauna monitoring (Delarue et al. 2025) and no Sei whales have been detected. The potential for interaction has therefore listed as ''Species or species habitat may occur within area*

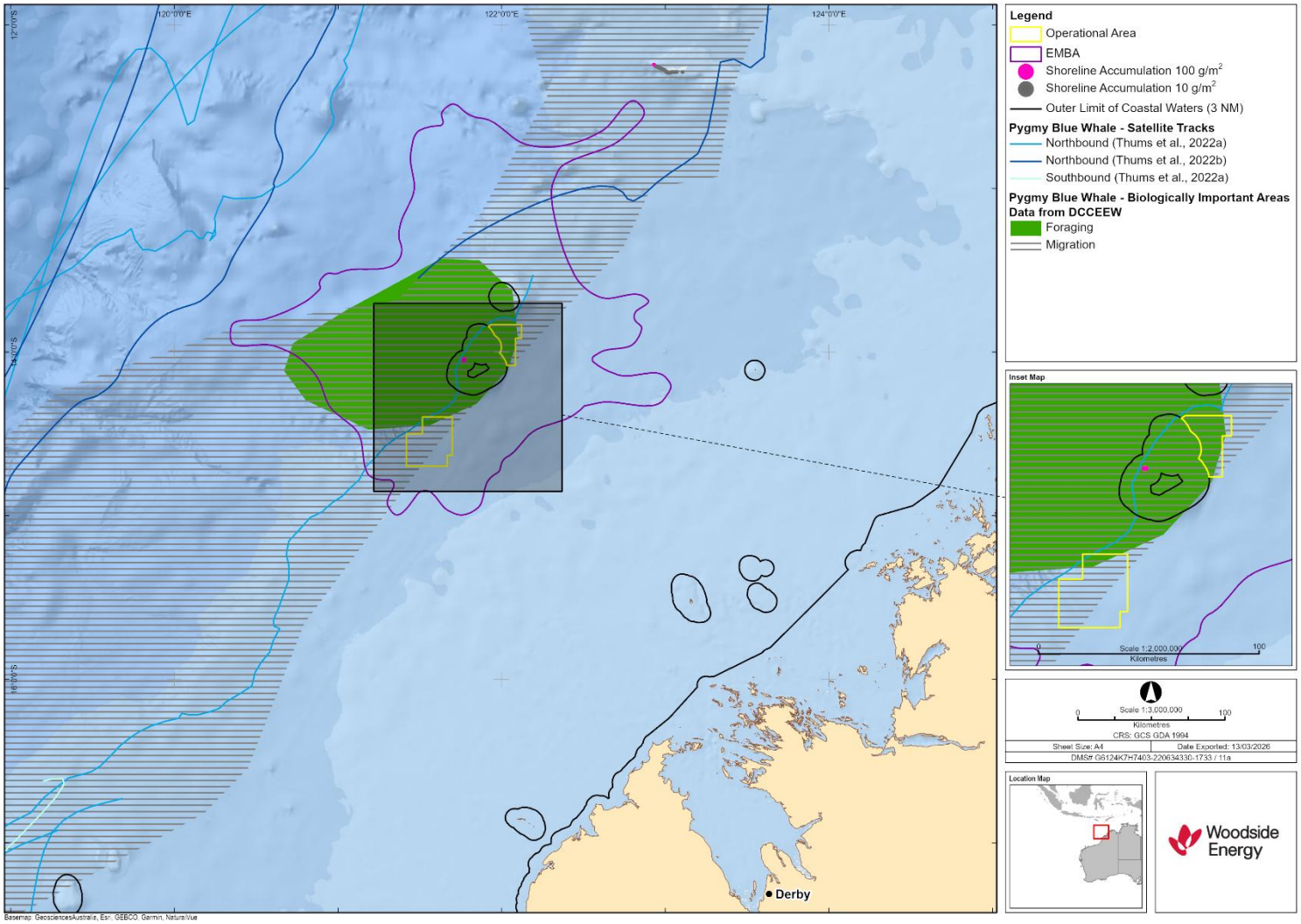
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Species name	Common name	EPBC Act (as per PMST report Appendix D)		Potential for interaction		
		Threatened status	***Migratory status***	***Operational Area Part A***	***Operational Area Part B***	***EMBA***
Dugong dugon	Dugong	N/A	Migratory	X	X	Breeding likely to occur within area

Table 4-11: Marine mammal BIAs within the EMBA

Species	BIA type	Approx. distance / direction from Operational Area Part A (km)	Approx. distance / direction from Operational Area Part B (km)
Pygmy Blue Whale	Potential Foraging	Overlaps	Overlaps
	Migration	Overlaps	Overlaps
Dugong	Reproduction (Ashmore Reef)	200 km north-east	275 km north-east
	Foraging (Ashmore Reef)	200 km north-east	277 km north-east

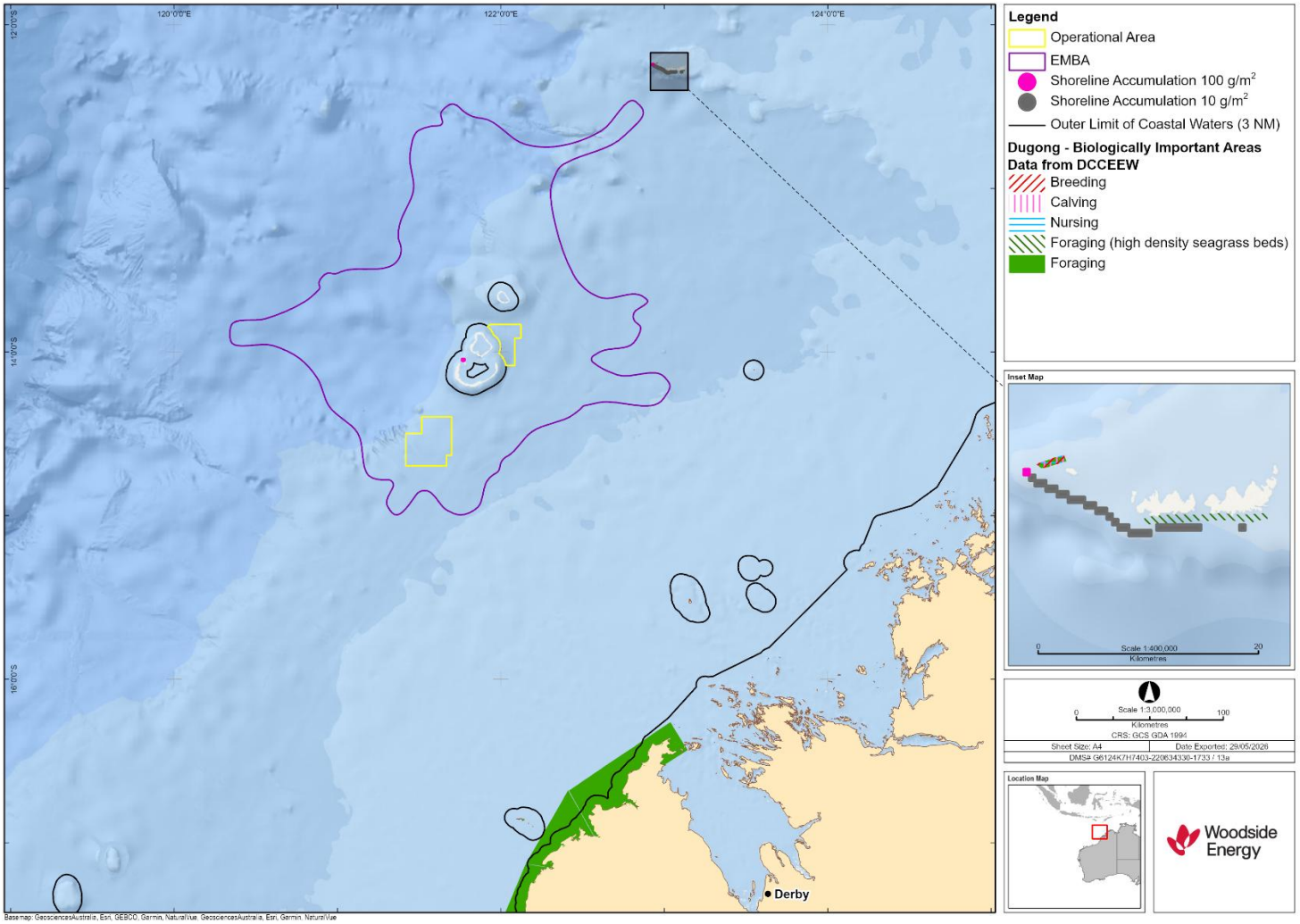
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Source: (DCCEEW 2024)

Figure 4-8: Pygmy blue whale BIAs overlapping the EMBA and tagged whale tracks for northbound migration

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Figure 4-9: Dugong BIAs overlapping the EMBA

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4.6.4 Seabirds and migratory shorebirds

A total of 31 EPBC Act listed threatened seabirds and migratory shorebird species have been identified to potentially occur within the EMBA, of which 17 occur in the Operational Area (Table 4-12). 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, Figure 4-10, Figure **4-11**, and Figure 4-12. The Operational Area Part A overlaps the resting BIA for the Little Tern (Table 4-12, Figure 4-10).

Detailed descriptions of seabirds and migratory shorebirds in the EMBA are provided in the Master Existing Environment document in Appendix C.

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Table 4-12: Threatened and migratory seabird and migratory shorebird species predicted to occur within the Operational Area and EMBA

Species name	Common name	EPBC Act (as per PMST report Appendix D)		Potential for interaction		
		Threatened status	***Migratory status***	***Operational Area Part A***	***Operational Area Part B***	***EMBA***
Anous tenuirostris melanops	Australian Lesser Noddy	Vulnerable	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area	Foraging, feeding or related behaviour likely to occur within area
Calidris acuminata	Sharp-tailed Sandpiper	Vulnerable	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat likely to occur within area
Calidris canutus	Red Knot, Knot	Vulnerable	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat likely occur within area
Calidris ferruginea	Curlew Sandpiper	Critically Endangered	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat likely to occur within area
Numenius madagascariensis	Eastern Curlew, Far Eastern Curlew	Critically Endangered	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat likely to occur within area
Papasula abbotti	Abbott's Booby	Endangered	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area
Phaethon lepturus fulvus	Christmas Island White-tailed Tropicbird, Golden Bosunbird	Endangered	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area
Phaethon rubricauda westralis	Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird	Endangered	N/A	Species or species habitat likely to occur within area	Species or species habitat known to occur within area	Breeding likely to occur within area

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Species name	Common name	EPBC Act (as per PMST report Appendix D)		Potential for interaction		
		Threatened status	***Migratory status***	***Operational Area Part A***	***Operational Area Part B***	***EMBA***
Sternula albifrons	Little Tern	Vulnerable	Migratory	Congregation or aggregation likely to occur within area	X	Congregation or aggregation likely to occur within area
Actitis hypoleucos	Common Sandpiper	N/A	Migratory	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
Anous stolidus	Common Noddy	N/A	Migratory	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	Breeding likely to occur within area
Calidris melanotos	Pectoral Sandpiper	N/A	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area
Calonectris leucomelas	Streaked Shearwater	N/A	Migratory	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
Fregata ariel	Lesser Frigatebird, Least Frigatebird	N/A	Migratory	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	Breeding likely to occur within area
Fregata minor	Great Frigatebird, Greater Frigatebird	N/A	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area	Foraging, feeding or related behaviour likely to occur within area
Phaethon lepturus	White-tailed Tropicbird	N/A	Migratory	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
Phaethon rubricauda	Red-tailed Tropicbird	N/A	Migratory	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
Acrocephalus orientalis	Oriental Reed-Warbler	N/A	Migratory	X	X	Species or species habitat likely to occur within area
Ardenna pacifica	Wedge-tailed Shearwater	N/A	Migratory	X	X	Breeding likely to occur within area

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Species name	Common name	EPBC Act (as per PMST report Appendix D)		Potential for interaction		
		Threatened status	***Migratory status***	***Operational Area Part A***	***Operational Area Part B***	***EMBA***
Charadrius leschenaultii	Greater Sand Plover, Large Sand Plover	Vulnerable	Migratory	X	X	Species or species habitat likely to occur within area
Cuculus optatus	Oriental Cuckoo, Horsfield's Cuckoo	N/A	Migratory	X	X	Species or species habitat likely to occur within area
Hydroprogne caspia	Caspian Tern	N/A	Migratory	X	X	Breeding known to occur within area
Limnodromus semipalmatus	Asian Dowitcher	Vulnerable	Migratory	X	X	Species or species habitat known to occur within area
Limosa lapponica	Bar-tailed Godwit	N/A	Migratory	X	X	Species or species habitat likely to occur within area
Limosa lapponica menzbieri	Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit	Endangered	N/A	X	X	Species or species habitat likely to occur within area
Onychoprion anaethetus	Bridled Tern	N/A	Migratory	X	X	Breeding likely to occur within area
Sterna dougallii	Roseate Tern	N/A	Migratory	X	X	Breeding likely to occur within area
Sula dactylatra	Masked Booby	N/A	Migratory	X	X	Breeding likely to occur within area
Sula leucogaster	Brown Booby	N/A	Migratory	X	X	Breeding known to occur within area
Sula sula	Red-footed Booby	N/A	Migratory	X	X	Breeding known to occur within area

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Species name	Common name	EPBC Act (as per PMST report Appendix D)		Potential for interaction		
		Threatened status	*Migratory status*	*Operational Area Part A*	*Operational Area Part B*	*EMBA*
Thalasseus bergii	Greater Crested Tern	N/A	Migratory	X	X	Breeding likely to occur within area

Table 4-13: Seabird and shorebird BIAs within the EMBA

Species	BIA type	Approx. distance / direction from Operational Area Part A (km)	Approx. distance / direction from Operational Area Part B (km)
Little Tern	Resting (Scott Reef)	Overlaps	11 km north
	Resting (Ashmore Reef)	182 km north-east	259 km north-east
Wedge-tailed Shearwater	Reproduction (Ashmore Reef)	90 km north-east	168 km north-east
Lesser Frigatebird	Reproduction (Ashmore Reef)	88 km north-east	167 km north-east
Greater Frigatebird	Reproduction (Ashmore Reef)	82 km north-east	168 km north-east
White-tailed Tropicbird	Reproduction (Ashmore Reef)	104 km north-east	174 km north-east
Roseate Tern	Reproduction (Ashmore Reef)	170 km north-east	247 km north-east
Brown Booby	Reproduction (Ashmore Reef)	147 km north-east	225 km north-east
Red-footed Booby	Reproduction (Ashmore Reef)	90 km north-east	167 km north-east
Lesser Crested Tern	Reproduction (Ashmore Reef)	170 km north-east	247 km north-east

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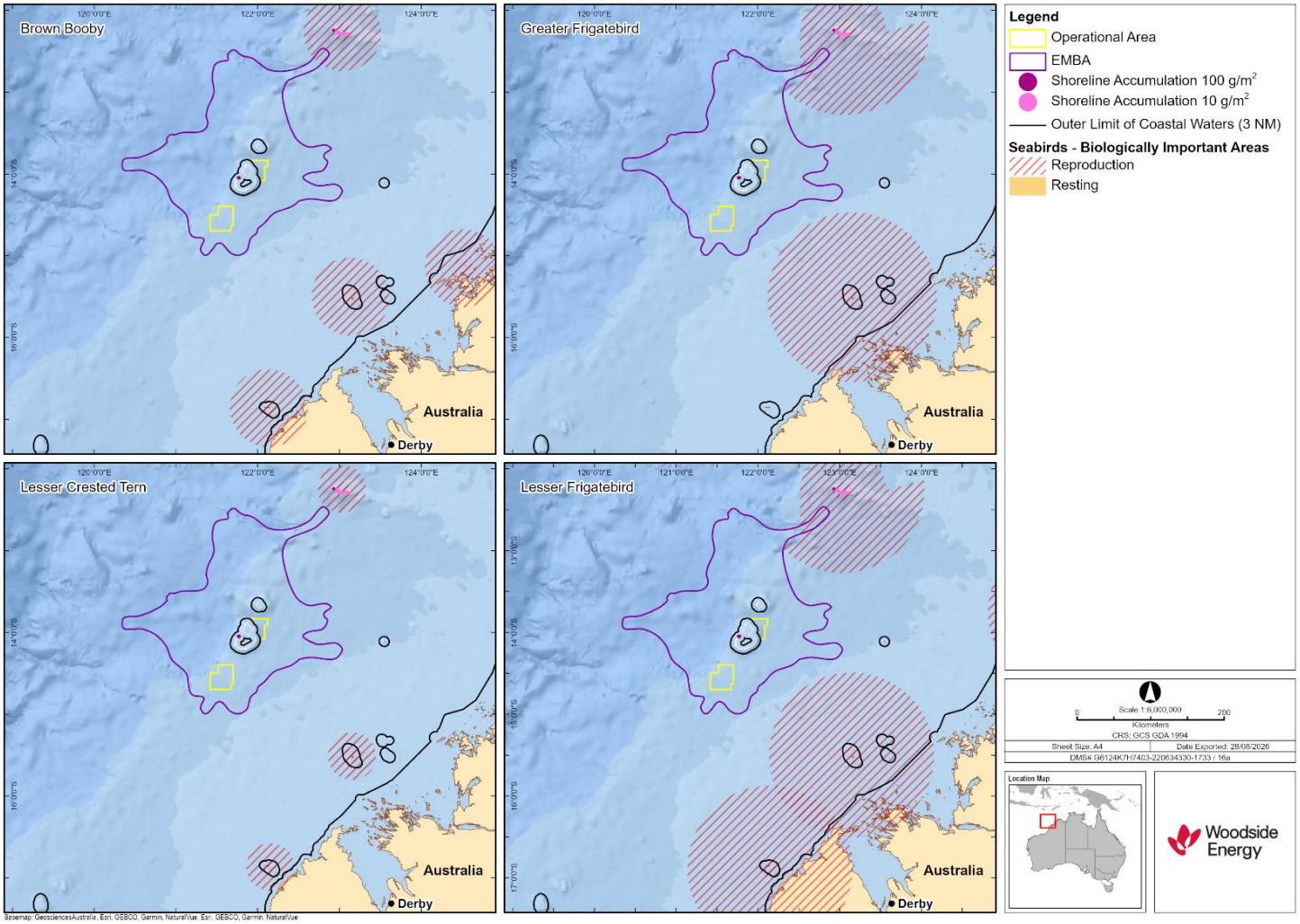


Figure 4-10: Seabird BIAs overlapping the EMBA #1

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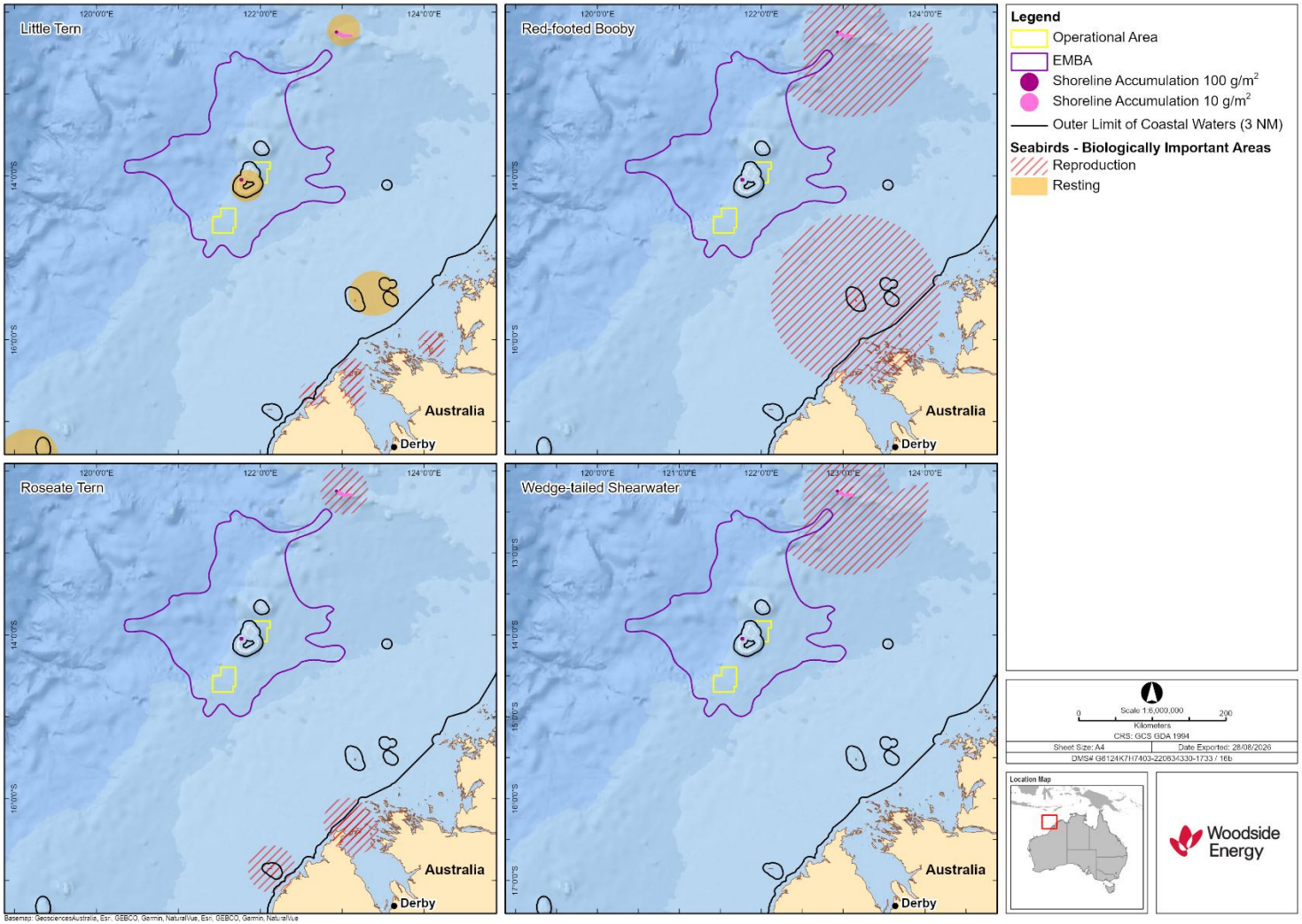


Figure 4-11**: Seabird BIAs overlapping the EMBA #2**

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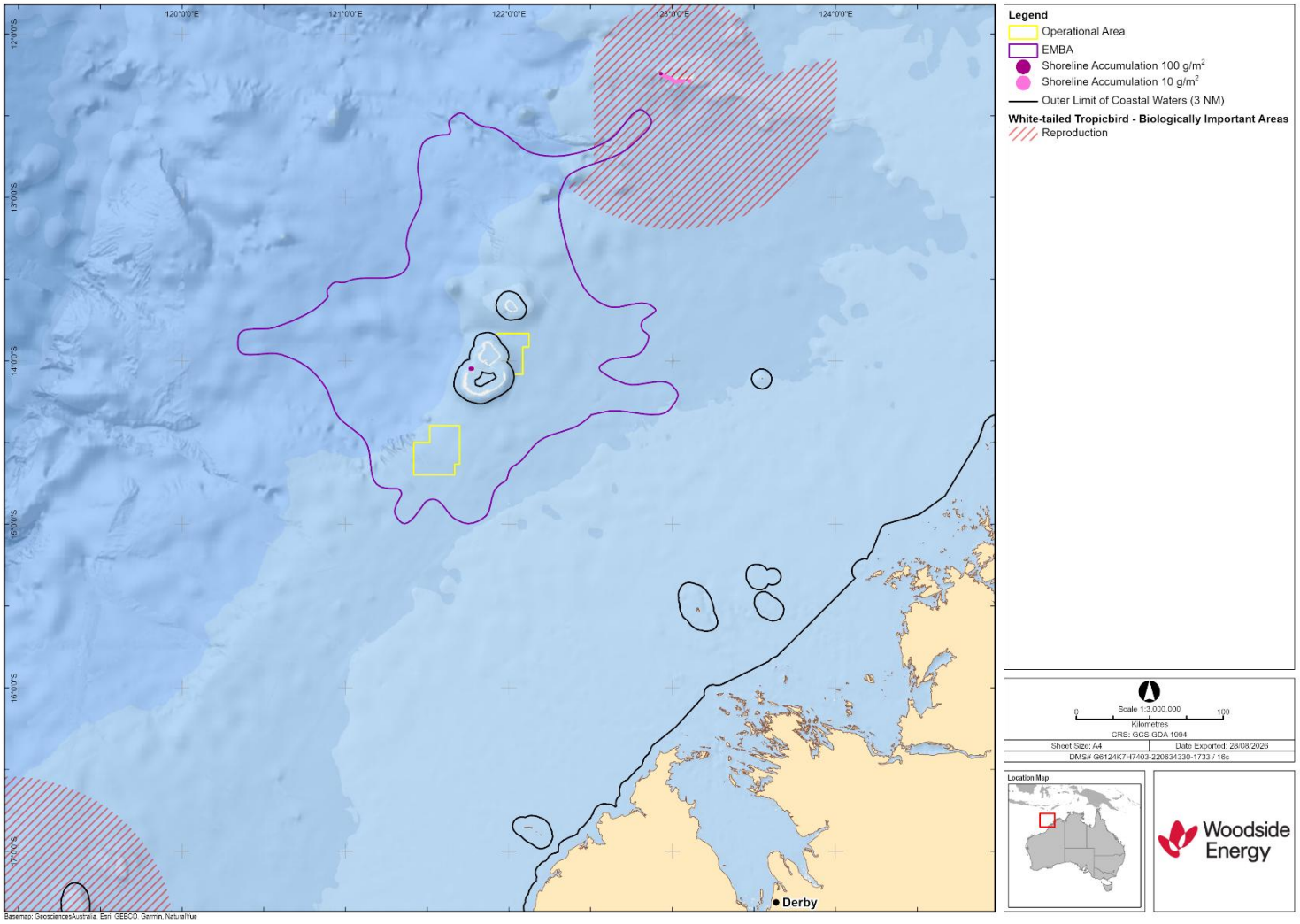


Figure 4-12: Seabird BIAs overlapping the EMBA #3

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4.6.5 Seasonal sensitivities for protected species

Seasonal sensitivities for protected migratory species identified as potentially occurring within the Operational Area are identified in Table 4-14. Seasonal sensitivities for species in the wider NWMR are described in the Master Existing Environment document in Appendix C.

Table 4-14: Key seasonal sensitivities for protected migratory species identified as occurring within the Operational Area

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mammals												
Pygmy Blue Whale (northern migration)[1]												
Pygmy Blue Whale (southern migration)[1]												
Seabirds and shorebirds												
Little Tern (breeding/resting)[2] May be present in NWMR outside breeding season – foraging and resting												
	Species may be present in the Operational Area											
	Peak period. Presence of animals is reliable and predictable each year											

References for species seasonal sensitivities:

1. Seasonality of the East Indian Ocean pygmy blue whale population from the North West Cape to Scott Reef, Western Australia. Sources: (Double et al., 2014; McCauley, 2011; McCauley et al., 2018)

2. CoA, Species group report card: Seabirds and migratory shorebirds. Supporting the Marine Bioregional Plan for the North-west Marine Region, Environment Protection and Biodiversity Conservation Act 1999 (Department of Sustainability, Environment, Water, Population and Communities [DSEWPaC] 2012).

4.7 Key ecological features (KEFs)

Two KEFs overlap the Operational Area. KEFs within the Operational Area and EMBA are identified in Table 4-15 and described in the Master Existing Environment document in Appendix C. Figure 4-13 shows the spatial overlap with KEFs and the Operational Area and EMBA.

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Table 4-15: KEFs within the Operational Area and EMBA.

Key ecological feature	Distance / direction from Operational Area to KEF (km)	Description
Continental Slope Demersal Fish Communities	Overlaps Operational Area Part B . Approximately 0.6 km west from Operational Area Part A	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 >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 >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. Demersal fish species occupy two distinct demersal biomes associated with the upper slope (225–500 m water depths) and the mid-slope (750–1,000 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).
Seringapatam Reef and Commonwealth waters in the Scott Reef Complex	Overlaps Operational Area Part A Approximately 17 km north-east from Operational Area Part B	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).
Ashmore Reef and Cartier Island and surrounding Commonwealth waters	Approximately 196 km north-east from Operational Area Part A . Approximately 274 km north-east from Operational Area Part B	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 >100 m, the reef platform is at the edge of the NWS and covers an area of 239 km². 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.

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Key ecological feature	Distance / direction from Operational Area to KEF (km)	Description
Ancient coastline at 125 m depth contour	Approximately 74 km south-east from Operational Area Part A Approximately 37 km south-east from Operational Area Part B	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. The ancient coastline is not continuous throughout the NWMR and coincides with a well-documented eustatic stillstand at ~130 m depth worldwide (Falkner et al. 2009). 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. 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).

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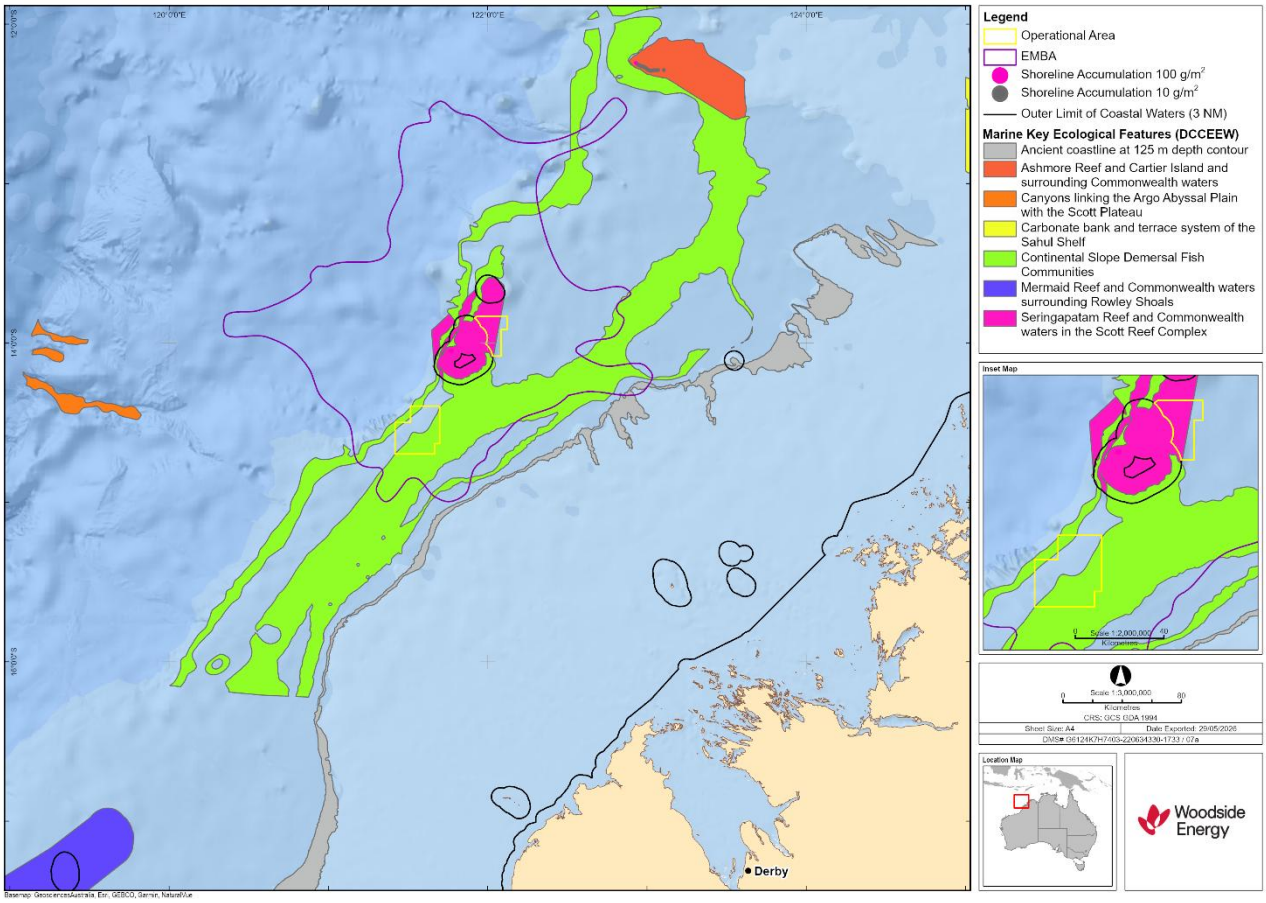


Figure 4-13: KEFs overlapping the Operational Area and EMBA

4.8 Protected places

No protected places overlap the Operational Area. Protected places within the Operational Area and EMBA are identified in Table 4-16 and presented in Figure 4-14. The Master Existing Environment document in Appendix C outlines the values and sensitivities of protected places and other sensitive areas in the Operational Area and EMBA.

Table 4-16: Established protected places and other sensitive areas overlapping the EMBA

	Distance & direction from Operational Area to protected place or sensitive area (km)	IUCN category* or relevant park zone overlapping the EMBA
AMPs		
NWMR		
Ashmore Reef	200 km north-east of Operational Area Part A	Recreational Use Zone (IUCN IV)
	276 km north-east of Operational Area Part B	
	193 km north-east of Operational Area Part A	Sanctuary Zone (IUCN Ia)
	270 km north-east of Operational Area Part B	
State Marine Parks and Nature Reserves		
Nature Reserves		
Scott Reef	5.6 km east of Operational Area Part A	Nature Reserve

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	Distance & direction from Operational Area to protected place or sensitive area (km)	IUCN category* or relevant park zone overlapping the EMBA
	23 km north-east of Operational Area Part B	

** 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 (Director of National Parks 2018) and South-west Marine Parks Network Management Plan 2018 (Director of National Parks 2018a).

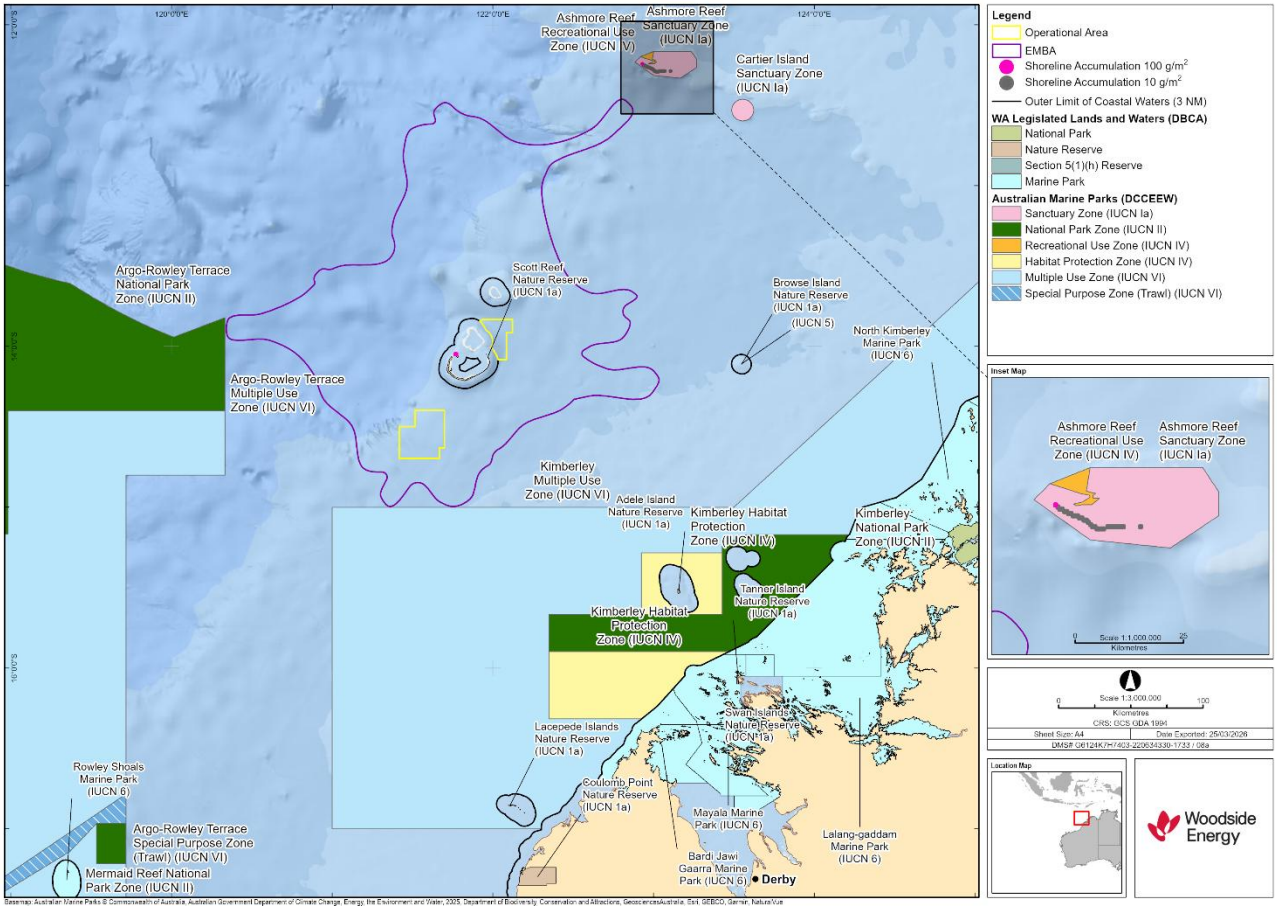


Figure 4-14: Protected areas overlapping the EMBA

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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 the Master Existing Environment document in Appendix C.

4.9.1 Native Title

For the activity in this EP, there are no native title claims or determinations, overlapping the Operational Area and five that are coastally adjacent to the Operational Area. Table 4-17 lists these; however, it does not differentiate between claims and determinations, as it is acknowledged that rights and interest may exist within either of these.

There are no Indigenous Land Use Agreements (ILUAs) overlapping the Operational Area and five that are coastally adjacent to the Operational Area (Table 4-17). Figure 4-15 shows the relevant native title claims or determinations and ILUAs relevant to the Operational Area. Further description of how Woodside considers native tile rights and interest is provided in Appendix F.

4.9.2 Coastally adjacent Indigenous 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 Operational Area to be an instructive means of identifying potentially relevant Indigenous groups to be consulted (see Section 5).

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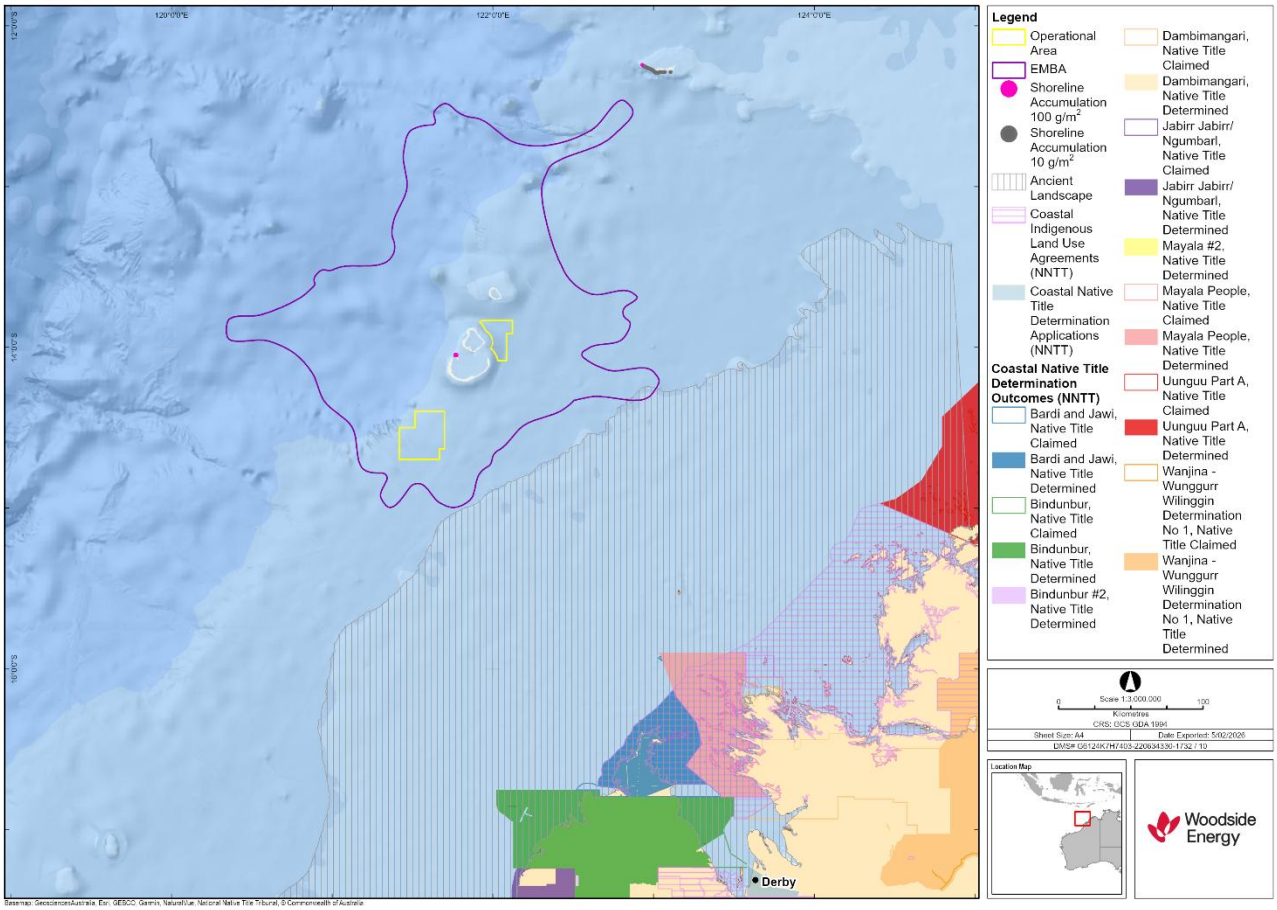


Figure 4-15: Operational Area and socio-cultural hydrocarbon thresholds in relation to Native Title Claims, Determinations and Indigenous Land Use Agreements

Table 4-17: Summary of Native Title Claims, Determinations and Indigenous Land Use Agreements which are coastally adjacent to the Operational Area

Claim/ determination/ ILUA	Registered Native Title Body Corporate (RNTBC)	Overlap with EMBA	Coastally adjacent to the EMBA
Claim/ Determination			
Dambimangari	Wanjina-Wunggurr (Native Title) Aboriginal Corporation RNTBC	No	Yes
Uunguu Part A	Wanjina-Wunggurr (Native Title) Aboriginal Corporation RNTBC	No	Yes
Mayala #2	Mayala Inninalang Aboriginal Corporation RNTBC	No	Yes
Mayala People	Mayala Inninalang Aboriginal Corporation RNTBC	No	Yes
Bardi and Jawi Native Title Determination	Bardi and Jawi Niimidiman Aboriginal Corporation RNTBC	No	Yes
Wanjina - Wunggurr Wilinggin Native Title Determination No 1	Wanjina-Wunggurr (Native Title) Aboriginal Corporation RNTBC	No	Yes
Boorroola Moorrool Moorrool	None identified, consulted via legal representative	No	Yes

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Claim/ determination/ ILUA	Registered Native Title Body Corporate (RNTBC)	Overlap with EMBA	Coastally adjacent to the EMBA
Warrwa Combined	None identified, consulted via legal representative	No	Yes
ILUA			
Mayala Country Marine Park ILUA	Mayala Inninalang Aboriginal Corporation	No	Yes
Bardi Jawi Conservation Estate ILUA	Bardi and Jawi Niimidiman Aboriginal Corporation	No	Yes
Dambimangari Kimberley Sea Country Strategy (KSCS) Marine Parks ILUA	Dambimangari Aboriginal Corporation, Wanjina-Wunggurr Aboriginal Corporation	No	Yes
Dambimangari Country Marine Park ILUA	Dambimangari Aboriginal Corporation, Wanjina-Wunggurr Aboriginal Corporation	No	Yes
Kimberley Barramundi Expansion Project ILUA	Mayala Inninalang Aboriginal Corporation	No	Yes
KTS Co-Existence ILUA	Dambimangari Aboriginal Corporation, Wanjina-Wunggurr Aboriginal Corporation	No	Yes
Reserve 30674 ILUA	Dambimangari Aboriginal Corporation, Wanjina-Wunggurr Aboriginal Corporation	No	Yes
State KTS ILUA	Dambimangari Aboriginal Corporation, Wanjina-Wunggurr Aboriginal Corporation	No	Yes
The Cockatoo Island Co-Existence ILUA	Dambimangari Aboriginal Corporation, Wanjina-Wunggurr Aboriginal Corporation	No	Yes
Wilinggin ILUA	Wanjina-Wunggurr Aboriginal Corporation, Wilinggin Aboriginal Corporation	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 4-19.

The Operational Area do not overlap a Commonwealth Marine Park. The EMBA does overlap with features of the Ashmore Reef Marine Park managed under the North-West Marine Parks Network Management Plan 2018. The EMBA overlaps a further one State Marine Park. Where these 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 and Appendix F) Consultation with these groups may identify heritage values and cultural features beyond those addressed in the marine park management plans. No identifiable representative bodies were specified for the marine parks overlapped by the EMBA (Table 4-18).

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As noted in the North West Marine Park Management Plan, there is limited information about the cultural significance of this marine park (Director of National Parks 2018). There is limited information about the cultural significance of the Scott Reef Nature Reserve.

Management plans for the AMPs note shipwrecks within the AMPs and overlap with World, National and Commonwealth heritage lists. These are addressed in Sections 4.9.8 and 4.9.9.

A number of management plans for the state marine parks also note Indigenous and maritime heritage within the marine parks.

Table 4-18: Summary of the Operational Area and EMBA overlap with Commonwealth and State Marine Park Management Plan areas

Marine Park Management Plan	Operational Area overlap	EMBA overlap	Specified bodies
Commonwealth Marine Park Management Plan			
Ashmore Reef Sanctuary Zone	No	Yes	No identifiable body specified
State Marine Park Management Plan			
Scott Reef Nature Reserve	No	Yes	No identifiable body specified

4.9.4 Indigenous protected areas

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.

There are no IPAs that overlap the Operational Area or EMBA.

4.9.5 Sea Country values

Sea country values of marine ecosystems are further described in the Master Existing Environment document 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

Table 4-20. Values identified in publicly available literature are summarised in Table 4-19.

4.9.5.1 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 Operational Area. Where cultural features or Sea Country values were identified these are summarised in Table 4-19 according to the Indigenous groups (where identified or inferable) who hold these values.

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

Indigenous group	Features and values	Source	Potential for overlap	
			Operational Area	EMBA
Bardi and Jawi	Feature: Mythologically important places	FCAFC (2010)	Possible (unspecified)	Possible (unspecified)
	Value: Activities of mythological beings in the sea area		Possible (unspecified)	Possible (unspecified)
	Feature: Resources including (1) dugong, (2) turtle and (3) trochus shell		Possible (2,3) No (1)	Possible (2,3) No (1)
	Value: Traditional knowledge of the sea and the features within		Possible (unspecified)	Possible (unspecified)
	Value: Access to the sea around the coast of the mainland of the Dampier Peninsula and among the islands for traveling, hunting and fishing		No	No
	Feature: Pearl shell	FCA (2005)	Possible	Possible
	Value: Fishing		Unlikely	Unlikely
	Feature: Feather		Possible	Possible
	Value: Reefs		No	Yes
	Value: Resource collection at One Arm Point (reef)	Oades and Meister (2013)	No	No
	Value: resources including: ▪ Banyjarr, (clam and abalone) (1) ▪ Noomool (seagrass) (2) ▪ Alngir (trochus), Goowarn (pearl shell) (3) ▪ Bluebone (Goorlan) (4) ▪ Aarli (fish) and fish stocks (5) ▪ Goorlil (turtle) (6) ▪ Odorr (dugong) (7) ▪ Joord (mullet) (8) ▪ Barnamb (stingray) (9)		No (2, 7,10) Possible (all other values)	No (2, 7,10) Possible (all other values)

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Indigenous group	Features and values	Source	Potential for overlap	
			Operational Area	EMBA
	▪ Ngarrangg (mud crab) (10)			
	Feature: Seagrass meadows		No	No
	Feature: Mangroves		No	No
	Value: Access to Sea Country		Possible (unspecified)	Possible (unspecified)
	Value: Sustainable fishing of (1) fish, (2) turtle and (3) dugong [resource availability]		Unlikely	Unlikely
	Feature: Saltwater including coral reefs communities (1), sea grass (2), saltmarsh communities (3), mangroves and macroalgae (4)		No	No(3) Possible (all other values)
	Feature: Whales (1), dolphins (2), estuarine crocodiles (3), sea and shore birds (4).		Possible (all)	Possible (all)
	Value(s): ▪ Marrgoorr (coral) (1) and marnany (reef) communities (2) ▪ Mangroves (3), creeks (4) and saltmarsh communities (5) ▪ Noomool (seagrass) (6) and laanyji (macroalgae) communities(7) ▪ Water and sediment quality (8) ▪ Geomorphology including beaches (9) ▪ Subtidal filter-feeding communities (10) ▪ Intertidal sand and mud flat communities and oombans (freshwater soaks) (11) ▪ Goorlil (marine turtles) (12) ▪ Aarli (fish) (13) including joorroo (sharks) (14) and barnamb (rays) (15) ▪ Odorr (dugongs) (16)	DBCA (2022)	Possible (2, 8,12 -15,17,19,20) No (all other values)	Possible (1, 2, 6, 7, 8,12 -15,17-20) No (all other values)

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Indigenous group	Features and values	Source	Potential for overlap	
			Operational Area	EMBA
	▪ Miinimbi (whales) and bayalbarr (dolphins) (17) ▪ Linygurra (estuarine crocodiles) (18) ▪ Sea and shore garrabal (birds) (19) ▪ Invertebrates (20)			
	Value: Shark Dreamtime associated with saltwater including how the hammerhead came into existence.	DBCA (2022)	Possible (unspecified)	Possible (unspecified)
	Value: Access to Sea Country areas specified below: ▪ Woolardgoon Special Purpose Zone ▪ Packer Island ▪ Bool Special Purpose Zone ▪ Thomas Bay ▪ Jilany Creek Special Purpose Zone ▪ Arnbarnani Special Purpose Zone ▪ Cape Leveque Island ▪ Oorroondoorroon Special Purpose Zone ▪ Alarm Shoal ▪ Birimbir Special Purpose Zone ▪ Hunter Creek ▪ Iinalang Special Purpose Zone ▪ Sunday Island Group ▪ Nooblooloon Special Purpose Zone ▪ Catamaran Bay ▪ Garrambany Special Purpose Zone		No (all locations)	No (all locations)

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Indigenous group	Features and values	Source	Potential for overlap	
			Operational Area	EMBA
	▪ Chunelarr Creek ▪ Maljin Special Purpose Zone ▪ Cygnet Bay ▪ Garramal Special Purpose Zone ▪ Cunningham Point			
	Value: Dreaming stories and songlines associated with ancestral beings that travelled Sea Country	Smyth and Bahrdt (2007)	Possible (unspecified)	Possible (unspecified)
	Feature: Islands (1), reefs (2), sandbanks (3) and marine species (4)		Possible (4 only)	Possible (2,4) No (1,3)
	Value/s: ▪ shark ancestral being (Looloolo) (1) ▪ spirit beings (rai) (2) ▪ double log raft (gaalwa) (3) ▪ pearl shell (goowarn) (4) ▪ middens (5) ▪ fish traps (6) ▪ reefs (marnany) (7) ▪ turtles (goorlil) (8) ▪ dugongs (odorr) (9)		 Possible (unspecified) (1,2) No (3,5,6,7,9) Possible (all other values)	 Possible (unspecified) (1,2) No (3,5,6,9) Possible (all other values)
	Value/s: ▪ rock cod (jimbiridj) (1) ▪ baler shell (ngarlanggarnanya) (2)	DBCA (2022)	 Possible (unspecified) (5) No (6, 12, 18, 19, 20, 21)	 Possible (unspecified) (5) No (6, 12, 19, 20)

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Indigenous group	Features and values	Source	Potential for overlap	
			Operational Area	**EMBA**
	▪ blue crab (gandjeelaadj) (3) ▪ flat head fish (beelbaba) (4) ▪ creator snake (unggudia) (5) ▪ dugong (waliny) (6) ▪ turtle (julawaddaa) (7) ▪ estuarine crocodile (goiyoiya) (8) ▪ whale (ngunuubange) (9) ▪ dolphin (jigeedany) (10) ▪ sea birds (11) ▪ owl, emu, kangaroo (12) ▪ barramundi (Ilerdda) (13) ▪ fish (jaiya) (14) ▪ crabs (ganbaneddee) (15) ▪ oysters (marlinju) (16) ▪ green turtle (waarlee) (17) ▪ coral reefs (waddaroo) (18) ▪ beaches (galaab) (19) ▪ mangrove (jindirm) (20) ▪ seagrass beds (julum) (21)		Possible (all other values)	Possible (all other values)
Mayala	Feature: spiritual beings that live on the islands	FCA (2019)	Possible (unspecified)	Possible (unspecified)
	Value: right to access, utilise and speak for buru or dambi (sea/land estates)		Possible (unspecified)	Possible (unspecified)
	Value: caring for Country - duty to protect their country,		Possible (unspecified)	Possible (unspecified)

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Indigenous group	Features and values	Source	Potential for overlap	
			Operational Area	EMBA
	Value: access to Country through numurr or 'saltwater highways'		Unlikely (unspecified)	Unlikely (unspecified)
	Value: Shells		Possible	Possible
	Value: access to/travel between islands ▪ "the deep sea" amongst the islands (1) ▪ Brue Reef as a source of trochus, fish and turtle (2)		No (All other values) Possible (deep sea)	No (All other values) Possible (deep sea)
	Value: Continuation of traditional Law		Possible (unspecified)	Possible (unspecified)
	Value: Caring for Country		Possible (unspecified)	Possible (unspecified)
	Value: Passing on traditional knowledge		Possible (unspecified)	Possible (unspecified)
	Value: Hunting, fishing and gathering the natural resources		Unlikely (unspecified)	Unlikely (unspecified)
	Value: Access to Country for ceremonial and religious purposes		Unlikely (unspecified)	Unlikely (unspecified)
	Value: Caring for Country including protection of sacred sites		Possible (unspecified)	Possible (unspecified)
	Value: Access for hunting, fishing and cultural activities on Country.	FCA (2018)	Unlikely (unspecified)	Unlikely (unspecified)
	Feature: two small islands and a small portion of a third island located in the Buccaneer Archipelago between Whirlpool Pass and Coppermine Creek		No	No
	Feature: The Sea Country (sandbanks)	DBCA (2023)	No	No
	Feature: Coral reef systems, estuaries and mangrove communities	Mayala Inninalang Aboriginal Corporation (2019)	No	No (reef systems occur only)
	Value(s): niwarda, jalnggoon (oysters), alngir (trochus), goowarn (Pinctada maxima) pearl shell, many kinds of fishes and a place to hunt turtle and collect useful materials such as ambool (baler shell) and ngoolnga (Trumpet Shell) used for carrying water.		Possible (resources) Unlikely (resource collection)	Possible (resources) Unlikely (resource collection)
	Feature: Continental shelf and sheltered bays support migratory pathways, calving and nursing habitat for (1) humpback whales (2) pygmy blue whales.		Possible (Whales)	Possible (Whales)
	Value(s):			

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Indigenous group	Features and values	Source	Potential for overlap	
			Operational Area	EMBA
	▪ saltwater fish (1) ▪ turtles and turtle eggs (2) ▪ dugong (3) ▪ crabs (4) and marrarn (mangrove jack) (5) ▪ barrbal (golden lined spinefoot) (6) ▪ jiyimarramarra (spinefoot) (7) ▪ gambarl (Surgeonfish) (8) ▪ aalngir (trochus) (9) ▪ clam shell (10) ▪ ngoolnga (Trumpet shell) (11) ▪ aamboorl (Baler shell) (12) ▪ oyster (13)		No (turtle eggs) Possible (all other values)	No (turtle eggs) Possible (all other values)
	Value: Loolool (Whale sharks)		Possible	Possible
	Value: Marine environment		Yes	Yes
	Feature: Baler shells were used to carry water on long journeys	DBCA (2022)	Unlikely	Unlikely
	Feature: Ochres and clays used for ceremonial purposes, seasonal camping areas and aarli (fish) traps		No	No
	Feature/Value: ▪ Marrgoorr (coral) (1) and marnany (reef) communities (2) ▪ Mangrove communities (3) ▪ Noomool (seagrass) (4) and laanyji (macroalgae) communities (5) ▪ Water and sediment quality (6) ▪ Geomorphology including beaches (7)		No (3,4,9,12,15) Possible (all other values)	No (3,9,12,15) Possible (all other values)

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Indigenous group	Features and values	Source	Potential for overlap	
			Operational Area	EMBA
	▪ Subtidal filter-feeding communities (8) ▪ Intertidal sand and mudflat communities (9) ▪ Goorlil (marine turtles) (10) ▪ Aarli (fish) including joorroo (sharks) and barnamb (rays) (11) ▪ Odorr (dugongs) (12) ▪ Miinimbi (whales) (13) and bayalbarr (dolphins) (14) ▪ Linygurra (estuarine crocodiles) (15) ▪ Sea and shore garrabal (birds) (16) ▪ Invertebrates (17)			
	Value: Intergenerational transmission and knowledge of Sea Country		Possible (unspecified)	Possible (unspecified)
	Value/s: ▪ fish (aarli) (1) ▪ turtles (goorlil) - green turtles (2), flatback turtles (3), loggerhead turtles (4), hawksbill turtles (5), leatherback turtles (5), olive ridley turtles (6) ▪ dugongs (odorr) (7) ▪ saltwater crocodiles (linygurra) (8) ▪ reef (marnany) (9) ▪ mangroves (10) ▪ whale sharks (loolooloo) (11) ▪ humpback whales (miinimbi) (12) ▪ snubfin dolphins (13) ▪ humback dolphins (14)		No (7,8,10,15) Unlikely (14) Possible (all other values)	No (7,8,10,15) Unlikely (14) Possible (all other values)

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Indigenous group	Features and values	Source	Potential for overlap	
			Operational Area	EMBA
	▪ mud crabs (ngarrangg) (15) ▪ rock oysters (16) ▪ trochus (alngir) (17) ▪ pearl oyster (goowarn) (18)			
	Feature: Ocean		Yes	Yes
Wanjina Wunggur Community (Ngarinyin people, Worrorra people, Wunambal Gaambera people)	Feature: hawksbill turtle nests	NNTT (2020)	No	No
	Feature: turtle and turtle eggs		Possible (turtles only)	Possible (turtles only)
	Feature: fish traps		No	No
	Value: ochre "red ochre (JaalJaal) deposits on the Maret Islands are 'the main source for red ochre in Wunambul Gaambera country' and is 'highly prized' because it 'is greasy and of high quality'. South Maret Island also has ochre (its name Ngalunii means 'place of red ochre'). used 'in different aspects of both men's and women's law' including 'in preparation of body paints for ceremonies' and 'refreshing Wanjina in art galleries'."		No	No
	Feature: reef sites and fish traps at Maret Island		No	No
	Value: The Maret Islands and Berthier Island are part of Wuyurru country. The creator being for Wuyurru country lives on a named island, which is approximately 10 kilometres from the Maret Islands The creator being created the islands in Wuyurru country The creator being 'oversees, manages and controls all of Wuyurru saltwater country'.		No	No
	Value: access to and preservation of resources and sites		No	No
	Value: Access to red ochre deposits used in trade, painting, cultural exchange and songs		No	No
	Value: the carrying on of wunan (exchange) of jaajaal is carried out extensively across the Maret Islands		No (based on specific location)	No (based on specific location)
	Value: caring for Country including protection of the home of the creator being		Possible (unspecified)	Possible (unspecified)

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Indigenous group	Features and values	Source	Potential for overlap	
			Operational Area	EMBA
	Feature: barramundi, salmon, swordfish, stingray and crab.	NNTT (2019)	Possible (all values)	Possible (all values)
	Feature: Cone Bay		No	No
	Value: access to fishing on foot from Cone Bay and intergenerational teaching of natural markers of Country.		No (based on specific location)	No (based on specific location)
	Feature: ancient shell fish mounds, Turtle, Barramundi, salmon		Possible (Fish species only)	Possible (Fish species only)
	Feature: Larlarum is the main camping place located near Jorjorgud Passage, around the Yeewoodu area in the area of Chambers Island. People would travel there by boat to camp, exchange shells for food and the get sugarbag and oyster. Barramundi, salmon and turtle are found in the licence all year round 'but the turtles are especially fat in winter'		No (based on specific location)	No (based on specific location)
	Value: resource collection at Chambers Island		No (based on specific location)	No (based on specific location)
	Value/s: Saltwater fish, turtles, dugong, crabs and oysters.	Director of National Parks (2018)	No (dugong) Possible (all other values)	No (dugong) Possible (all other values)
	Feature: Dambimangari saltwater people of the Kimberley region Country covers 12,000 km2 of sea dotted with over 700 islands.	Kearney, A., O'Leary, M. & Platten, S. (2023)	No (based on specific location)	No (based on specific location)
	Value: saltwater identity	"Director of National Parks (2018)	Possible (unspecified)	Possible (unspecified)
	Value/s: We believe all the land, wundaagu (sea), heavens and all things in and of Country were put here by Wanjina and Wunggurr – our creators.	Wanjina Wunggurr PBC (2025)	Possible (unspecified)	Possible (unspecified)
	Value/s: When we go fishing, we need to talk to the wundaagu (sea).		Possible (unspecified)	Possible (unspecified)
	Value/s: Cultural places on Wunambal Gaambera Country. There is buwadangani ngundalu (rock art place), garnmen minya (cave place), burials, stone arrangements, middens and Lalai ngundalu (dreaming places) as well as history places that tell us about our ancestors' relationships with other peoples like the Makassans from Indonesia, who sailed to our Country to hunt sea cucumber. "		No	No

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Indigenous group	Features and values	Source	Potential for overlap	
			Operational Area	EMBA
	Value/s:Gawi (fish) and other seafoods		Known to occur	Known to occur
	Value/s: Our customary rights to fish and collect seafood are recognised under statutory law.		Possible (unspecified)	Possible (unspecified)
	Value/s: We have strong traditions for catching and collecting gawi and other foods from the wundaagu (sea), wurrurru (reefs) and darrngarla (mangroves). These traditions are from the Lalai and are captured in our songs, stories and paintings. Our Uunguu knowledge includes understanding when gawi and other seafoods are fat and ready to collect and knowing how to prepare and cook them.		Possible (unspecified)	Possible (unspecified)
	Feature: Stone fish traps		No	No
	Value/s: Marlinju (rock oyster)		Possible	Possible
	Value/s: Mangguru (marine turtles) and balguja (dugong) Mangguru (marine turtles) and balguja (dugong) are important in both our traditional stories and as foods in our traditional diets."		Possible (marine turtles only)	Possible
	Value/s: Amiya (marine turtle eggs) to drink raw or to cook		No	No
	Value/s: Jala (seagrass) areas are important for turtle and dugong	Wunambal Gaambera Aboriginal Corporation (2017)	No	Possible
Unspecified	Feature: the ocean can include sacred sites and Songlines.	Smyth (2008)	Possible (unspecified)	Possible (unspecified)
	Value: people have kin relationships to important animals, plants tides and currents.		Possible (unspecified)	Possible (unspecified)
	Feature: archaeological sites in submerged landscapes.	Crabtree et al. (2021)	No	No
	Value: Sea Country has customary law defining ownership and management rights and responsibilities.	Muller (2008)	Possible (unspecified)	Possible (unspecified)
	Value: knowledge of Sea Country	Kearney et al (2023)	Possible (unspecified)	Possible (unspecified)
	Value: connection to Sea Country		Possible (unspecified)	Possible (unspecified)
	Value: care for Sea Country		Possible (unspecified)	Possible (unspecified)

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Indigenous group	Features and values	Source	Potential for overlap	
			Operational Area	EMBA
	Value: the extent of Sea Country is determined by the travels of dreaming ancestors. This is recorded and conveyed through songlines.		Possible (unspecified)	Possible (unspecified)
	Feature; archaeological sites indicate that islands were occupied prior to sea level rise.	DBCA (2020)	No	No
	Value: Sea Country includes values, places, resources, stories and cultural obligations.	Smyth (2007)	Possible (unspecified)	Possible (unspecified)
	Value: activities relating to resources included: ▪ dugong hunting (1) ▪ turtle hunting (2) ▪ turtle egg collecting (3) ▪ seabird egg collecting (4) ▪ spearing fish (5) ▪ reef trapping fish (6) ▪ herding fish (7) ▪ line fishing (8) ▪ collecting fish in stone fish traps (9) ▪ poisoning fish (10) ▪ gathering shellfish and other marine resources. (11)		Unlikely (all activities)	Unlikely (all activities)
	Value: people have kinship relationships with every plant and animal.	Juluwarlu Aboriginal Corporation (2004)	Possible (unspecified)	Possible (unspecified)
	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.		Unlikely	Unlikely
	Feature: tangible and intangible heritage.	Macfarlane and McConnell (2017)	Possible (unspecified)	Possible (unspecified)
	Feature: archaeological evidence of varied occupation and adaptation.		No	No

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Indigenous group	Features and values	Source	Potential for overlap	
			Operational Area	EMBA
	Value: a distinct way of life centred around the use of limited water and coastal resources.		No	No
	Feature: Potential for UCH in bonaparte basin (Kimberly and Arhnem Land)	Norman et al. (2024)	No	No
	Value: Sea Country	Smyth (2008)	No	No
	Value: Responsibility for managing Sea Country	Australian Marine Parks (2018)	Possible (unspecified)	Possible (unspecified)
	Value: Management of Sea Country *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.*		Possible (unspecified)	Possible (unspecified)
	Value: Traditional Fishing and Hunting		Possible (unspecified)	Possible (unspecified)
	Value: Totemic Species		Possible (unspecified)	Possible (unspecified)
	Value: Access to Sea Country		Possible (unspecified)	Possible (unspecified)
	Value: Marine resources		Possible (unspecified)	Possible (unspecified)
	Value: Rights to hunt, fish and gather		Possible (unspecified)	Possible (unspecified)
	Value: Ashmore Reef Traditional Indonesian fishers have also visited and used the northern coast of Australia and its islands and reefs since at least the early eighteenth century. Evidence of this, for example grave sites, is found within the Ashmore Reef Marine Park.		No	No

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4.9.5.2 Indigenous archaeological heritage assessment

Indigenous archaeological heritage in relation to the North-west Marine Region (NWMR) is described in the Master Existing Environment document in Appendix C.

The Western Australian Department of Planning, Lands and Heritage (DPLH) Aboriginal Heritage Inquiry system was searched which showed 0 Registered Aboriginal Sites and 0 Lodged Aboriginal Sites for the EMBA (Department of Planning Land, Heritage and Aboriginal Enquiry System Results – Appendix I). 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 oil spill, would involve prioritising further consultation with key contacts within DPLH and relevant local Indigenous communities.

Archaeological material on the Ancient Landscape is a relevant matter for the proposed activity as there is overlap between the Operational Area and the Ancient Landscape, and potential for seabed disturbance from planned activities and therefore potential for impacts to archaeological material. Assessment of the potential for archaeological material to be impacted by the Petroleum Activity is discussed in Sections 6.8 and 6.9.

No sites of significance within the Operational Area were identified by Traditional Custodians during consultation in the course of preparing the EP.

4.9.5.3 Underwater Cultural Heritage

Further information regarding Indigenous archaeological heritage in relation to the Ancient Submerged Landscape in the North-west Marine Region (NWMR) is described in the Master Existing Environment document in Appendix C.

An assessment of the potential impacts on archaeological material by the proposed activity is discussed in Sections 6.8.2 and 6.11

4.9.5.4 Feedback received via consultation to inform Existing Environment Description

Indigenous 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 (Table 1 in Appendix F)

Feedback received on potential cultural features and heritage values during consultation are described in

Table 4-20.

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 7.8)

Table 4-20: Summary of feedback received via consultation to inform Existing Environment Description

Relevant Indigenous group / individuals	Consultation context	Description of value / feature / interest	Potential for overlap	
			Operational Area	EMBA
Traditional Custodians and Nominated Representative Corporations				
Bardi and Jawi Niimidiman Aboriginal Corporation	Consultation for this EP	No values raised	-	-
Boorroola Moorrool Moorrool	Consultation for this EP	No values raised	-	-

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Relevant Indigenous group / individuals	Consultation context	Description of value / feature / interest	Potential for overlap	
			Operational Area	EMBA
Dambimangari Aboriginal Corporation	Consultation for this EP	No values raised	-	-
Gogolanyngor Aboriginal Corporation	Consultation for this EP	No values raised	-	-
Mayala Inninalang Aboriginal Corporation	Consultation for this EP	No values raised	-	-
Nyul Nyul PBC Aboriginal Corporation	Consultation for this EP	Value/s: Whales	Possible	Possible
		Value/s: Songlines *Connections to people further north*	Possible (unspecified)	Possible (unspecified)
		Value/s: Cultural artefacts	No	No
La Djarda Bay Aboriginal Corporation	Consultation for this EP	No values raised	-	-
Nimanburr Aboriginal Corporation	Consultation for this EP	No values raised	-	-
Wunambal Gaambera Aboriginal Corporation	Consultation for this EP	No values raised	-	-
Wilinggin Aboriginal Corporation	Consultation for this EP	No values raised	-	-
Wanjina-Wunggurr (Native Title) Aboriginal Corporation	Consultation for this EP	No values raised	-	-
Walalakoo Aboriginal Coporation	Consultation for this EP	No values raised	-	-
Warrwa Combined (Warrwa)	Consultation for this EP	No values raised	-	-
Yawuru Aboriginal Corporation	Consultation for this EP	No values raised	-	-
Native Title Representative Bodies				
Kimberly Land Council	Consultation for this EP	No values raised	-	-
Northern Land Council	Consultation for this EP	No values raised	-	-
Other Indigenous Groups				
Lombadina Aboriginal Corporation	Consultation for this EP	No values raised	-	-
Indigenous Saltwater Advisory Group	Consultation for this EP	No values raised	-	-

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4.9.6 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.

The cultural features and heritage values identified in Sections 4.9.1 to 4.9.7 confirms whether there is any potential for these to exist within the Operational Area or EMBA. 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 Sections 6.8 and 6.9.

A summary of cultural features and heritage values identified through both consultation and desktop assessment is provided in Table 4-21.

Where cultural features are physical elements of a place, these can generally be assessed for impacts; where a feature is avoided, impacts from planned activities are not predicted. Heritage values relate less to what is significant and more to why something is significant; potential interactions between heritage values and the Operational Area can only be reliably informed by consultation with Traditional Custodians where they are willing to share the necessary knowledge.

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Table 4-21: 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.	x	x	No	No
Fish traps	Stone arrangements constructed in intertidal areas which fill with fish at high tide and trap them at low tide.	x	✓	No	No
Submerged archaeological sites	The Ancient Landscape extends between 125m and 130m below current sea level. Occupation of this area may have left traces through now submerged archaeological sites. Historic wrecks	x	✓	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	No
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	No
Intangible values					
Songlines	Publicly available literature talks to Songlines associated with ancestral beings that travelled Sea Country.	✓	✓	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
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.	x	✓	Possible	Possible
Ceremonial sites	Places where ceremony (e.g. thalu ceremonies) are performed. All identified ceremonial sites are located onshore.	x	✓	No	No
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.	x	✓	Possible	Possible
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.	x	✓	Possible	Possible
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	x	✓	Possible	Possible
Access to Country	Limitations on Traditional Custodians accessing or enjoying areas of Sea Country	x	✓	Unlikely	Unlikely
Kinship systems and totemic species	Traditional Custodians have a 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.	x	✓	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
Resource collection	Fishing, hunting, gathering of marine species including marine mammals, marine reptiles, fish and invertebrates.	x	✓	Unlikely	Unlikely
Marine ecosystems and species					
Water quality	Interest only, raised as a natural environment interest	x	✓	Yes	Yes
Marine species	Generally raised in consultation and literature as an interest	x	✓	Yes	Yes
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	x	✓	Possible	Possible
Marine mammals: Dugongs	Culturally important species Used as a resource	x	✓	No	Possible
Marine reptiles: Marine turtles	Culturally important species and migration Turtles and turtle eggs as a resource	x	✓	Possible	Possible
Fish: Fish, whale sharks, sharks and rays	Culturally important species Used as a resource Law run through the sea, including fish Fish, including bream and sting rays are totemic species Fish, including sharks and rays raised as a natural environment interest	x	✓	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
Cephalopods: Squid and Octopus	Thalu species of totemic importance Resource	x	✓	Possible	Possible
Intertidal communities: Bivalves, gastropods, echinoderms (sea urchins), crustaceans	Resource.	x	✓	Possible	Possible
Seabirds	Culturally important species Birds (including shags, seagulls and osprey) and bird eggs as a resource	x	✓	Possible	Possible
Benthic habitats: Macroalgal communities	Interest only, raised as a natural environment interest.	x	✓	Possible	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.	x	✓	No	No
Shoreline habitats: Intertidal sand/ mudflat communities	Interest only, raised as a natural environment interest.	x	✓	No	Possible

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4.9.7 Historic sites of significance

There are no sites of historic cultural heritage significance within the Operational Area and two sites in the EMBA. These are identified in the following sections and described in Appendix F.

4.9.8 Historic underwater cultural heritage

The protection of historic underwater heritage under Commonwealth and State legislation is described in Master Existing Environment document 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 the Operational Area, however, two sites exist (Yarra and Onogra shipwrecks) within the EMBA (Figure 4-16).

Table 4-22 lists sites identified closest proximity to the Operational Area.

Table 4-22: Underwater heritage sites within closest proximity of the Operational Area

Vessel name	Year wrecked	Wreck location	Latitude (D.MM °S)	Longitude (D.MM °E)	Distance / direction from Operational area (km)
Yarra	1884	Scott Reef	-14^0 2" 25.77"	121^0 46" 12.05"	~20 km W of Operational Area Part A
Onogra	1987	Scott Reef	-14^0 0" 0"	121^0 46" 4.98"	~20 km W of Operational Area Part A

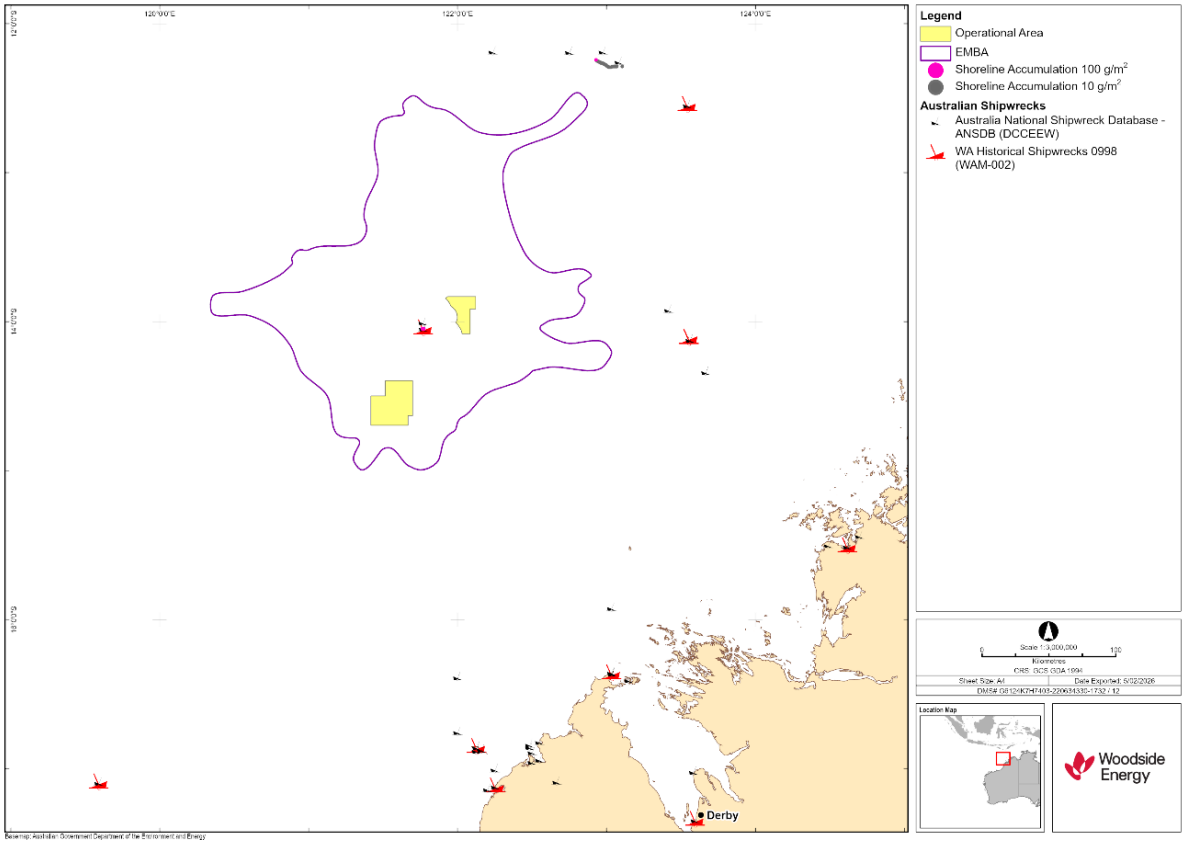


Figure 4-16: Shipwrecks in the EMBA

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4.9.9 World, National and Commonwealth heritage listed places

No listed heritage places overlap the Operational Area. World, National and Commonwealth heritage places within the EMBA are identified in Table 4-23. The Master Existing Environment document in Appendix C outlines the values and sensitivities of these places.

Table 4-23: World, National and Commonwealth heritage listed places within the EMBA

Listed Place	Distance / direction from Operational Area to Listed Place (km)
World Heritage Places	
None	
National Heritage Places (NHP)	
None	
Commonwealth Heritage Places (CHP)	
Scott Reef and Surrounds	11.6 km south-west of Operational Area Part A

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4.10 Socio-economic environment

4.10.1 Commercial fisheries

Several Commonwealth and State fishery management areas are located within the Operational Area and EMBA. Data from the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) were used to identify if Commonwealth managed fisheries have fished within the Operational Area and EMBA in the most recently available ten-year period of catch and effort data (2013–2024). FishCube data was also requested from the WA Department of Primary Industries and Regional Development (DPIRD) for the most recently available five-year period of fishery catch and effort data (2020-2025). This data was used 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 4-24 provides an assessment of the potential interaction and the Master Existing Environment document in Appendix C provides further detail on the fisheries that have been identified through desk-based assessment and consultation (Section 5).

One Commonwealth managed fisheries were identified as having a potential interaction with the Petroleum Activity, within the Operational Area and within the EMBA (Figure 4-17). Three State managed fisheries were identified as having a potential interaction with the Petroleum Activity, within the Operational Area and within the EMBA (Figure 4-18).

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Table 4-24: Commonwealth and State commercial fishery management areas overlapping the Operational Area and EMBA

Fishery	Potential for interaction during activity (x = no spatial overlap; ✓= spatial overlap; blue shading = possibility of interaction)		Description
	Operational Area	EMBA	
Commonwealth managed fisheries			
North West Slope Trawl Fishery	✓	✓	The North West Slope Trawl Fishery management area overlaps the Operational Area and EMBA. The North West Slope Trawl Fishery extends from 114 °E to 125 °E, from the 200 m isobath to the outer limit of the Australian Fishing Zone (200 nm from the coastline, which is the boundary of the Australian Exclusive Economic Zone [EEZ]). Fishing for scampi occurs over soft, muddy sediments or sandy habitats, using demersal trawl gear on the continental slope (Patterson et al. 2017). The North West Slope Trawl Fishery commenced in 1985 and the number of active vessels peaked at 21 in the 1986–1987 season, decreasing to between 1 and 6 vessels per year since 2005–2006. Three vessels operated in each of the 2022–2023 and 2023–2024 seasons (Keller et al. 2025). Three vessels were active in the 2022–2023 and 2023–2024 season, decline from 4 in the 2021–2022 season, and trawl-hours increased from 4,351 in 2022–2023 to 4,555 in 2023–2024 (Keller et al. 2025). Accordingly, Woodside considers it a possibility that interactions with the fishery may occur in the Operational Area and the EMBA.
Southern Bluefin Tuna Fishery	✓	✓	This fishery management area overlaps with the Operational Area and EMBA. 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 et al. 2025) The fishery has not been active in the Operational Area or EMBA within the last five years (ABARES 2025). 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 Tuna Fishery	✓	✓	The Skipjack Tuna Fishery overlaps the Operational Area and EMBA, however has not been actively fished since the 2008–2009 fishing season (Patterson and Delewski 2025). Therefore, Woodside considers there is no potential for interaction with this fishery at present.
Western Tuna and Billfish Fishery	✓	✓	While this fishery management area overlaps the Operational Area and EMBA, fishing effort in the last five years has been concentrated in southwest WA (typically as far north as Carnarvon) and occasionally off South Australia. Woodside considers there to be no potential for interaction with this fishery given the current distribution of fishing effort.

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Fishery	Potential for interaction during activity (x = no spatial overlap; ✓= spatial overlap; blue shading = possibility of interaction)		Description
	Operational Area	EMBA	
State managed fisheries			
Kimberley Crab Managed Fishery	✓	✓	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. 2020).
Mackerel Managed Fishery	✓	✓	The commercial fishery extends from the West Coast Bioregion to the WA/Northern Territory (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). 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). The Mackerel Managed Fishery overlaps the Operational Area and EMBA. The Operational Area overlap this fishery (specifically, the Kimberley management area – Area 1) but fishing effort has not been reported in the Catch and Effort System (CAES) blocks overlapping the Operational Area in the last five years (not active at 10 nm), and therefore it is considered that there is no interaction with this fishery.
Marine Aquarium Fish	✓	✓	The Marine Aquarium Managed Fishery operates in all State waters between the Northern Territory border and South Australian border and overlaps the Operational Area. The fishery is typically more active in waters south of Broome with higher levels of effort around the Capes region, Perth, Geraldton, Exmouth, Dampier, and Broome. There is also recent effort in the waters from Broome northwards to the NT border (Newman et al.2024). In 2023, the total catch for the Marine Aquarium Fish Managed Fishery was 107,786 fishes (including syngnathids, invertebrates and sponges), 18 t of coral, live rock and living sand, and 272 L of marine plants and live feed (Newman et al. 2024). This fishery is typically active within waters <30 m deep. However, there was fishing effort recorded in the CAES blocks overlapping the Operational Area in the last five years. Therefore, it is considered it is considered that there is potential for interaction with this fishery.
WA North Coastal Shark Fishery	✓	✓	This fishery management area overlaps the Operational Area. However, fishing activity has not been reported by this fishery since the 2008–2009 fishing season (Patterson et al. 2021). Accordingly, Woodside considers there to be no interaction with this fishery.

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Fishery	Potential for interaction during activity (x = no spatial overlap; ✓= spatial overlap; blue shading = possibility of interaction)		Description
	Operational Area	EMBA	
Northern Demersal Scalefish Fishery	✓	✓	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). Previous years catch based on State of the Fisheries annual reports provided by DPIRD: The Northern Demersal Scalefish Managed Fishery landed 1,450 t in 2023, 1,458 t in 2022, 1,544 t in 2021, 1,419 t in 2020, 1,507 t in 2019, and 1,297 t in 2018. In 2023, the majority of the catch was landed from Zone B, with 1,233 t in 2023. The 2023 catch of jobfish group (Pristipomoides spp.) was 502 t, 91% of which was goldband snapper (Wakefield et al. 2024). Eight vessels fished in the 2023 fishing season.
Pearl Oyster Managed Fishery	✓	✓	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. Fishing effort is mostly focused in shallow coastal waters (10–15 m depth), with a maximum depth of 35 m (Lulofs et al. 2002).
The South-West Coast Salmon Fishery	✓	✓	The South West Coast Salmon Managed Fishery management area overlaps the Operational Area. As no fishing occurs north of the Perth metropolitan area, no interaction with this fishery is anticipated.
West Coast Deep Sea Crustacean Managed Fishery	✓	✓	The West Coast Deep Sea Crustacean Managed Fishery is permitted to fish in waters deeper than the 150 m isobath overlapping the Operational Area. However, no fishing effort was recorded within the CAES blocks overlapping the Operational Area and as fishing effort is concentrated in water depths of 500–800 m (significantly deeper than the Operational Area). Fishing effort for this fishery has not been recorded within the CAES blocks overlapping the EMBA only in the last five years. Therefore, it is considered that there is no potential for interaction with this fishery within the EMBA either.
Tour Operator	✓	✓	The Operational Area overlap this fishery management area. Fishery effort for this fishery has been recorded within the CAES blocks overlapping the Operational Area and EMBA only in the last five years. Therefore, it is considered that there is potential for interaction with this fishery.

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Fishery	Potential for interaction during activity (x = no spatial overlap; ✓= spatial overlap; blue shading = possibility of interaction)		Description
	Operational Area	EMBA	
West Australian Abalone Fishery	x	✓	While the EMBA is overlapped by this fishery management area, no commercial fishing has occurred north of Moore River since 2011–2012. As there was no fishing effort reported within the CAES blocks overlapping the Operational Area or EMBA in the last five years, no interaction with this fishery is anticipated.
Broome Prawn Managed Fishery	x	✓	The Broome Prawn Managed Fishery operates off Broome and forms part of the North Coast Prawn Fishery. 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. 2023). Two boats undertook trial fishing activities in 2023. Catches were deemed to be too low to undertake further fishing activity (Koefoed et al. 2024). As there was no fishing effort reported within the CAES blocks overlapping the Operational Area or EMBA in the last five years, no interaction with this fishery is anticipated.
Specimen Shell Managed Fishery	x	✓	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, Albany and Esperance (Bruce et al. 2024). Fishing effort for this fishery has not been recorded within the CAES blocks overlapping the EMBA only in the last five years. Therefore, it is considered that there is no potential for interaction with this fishery in the EMBA.

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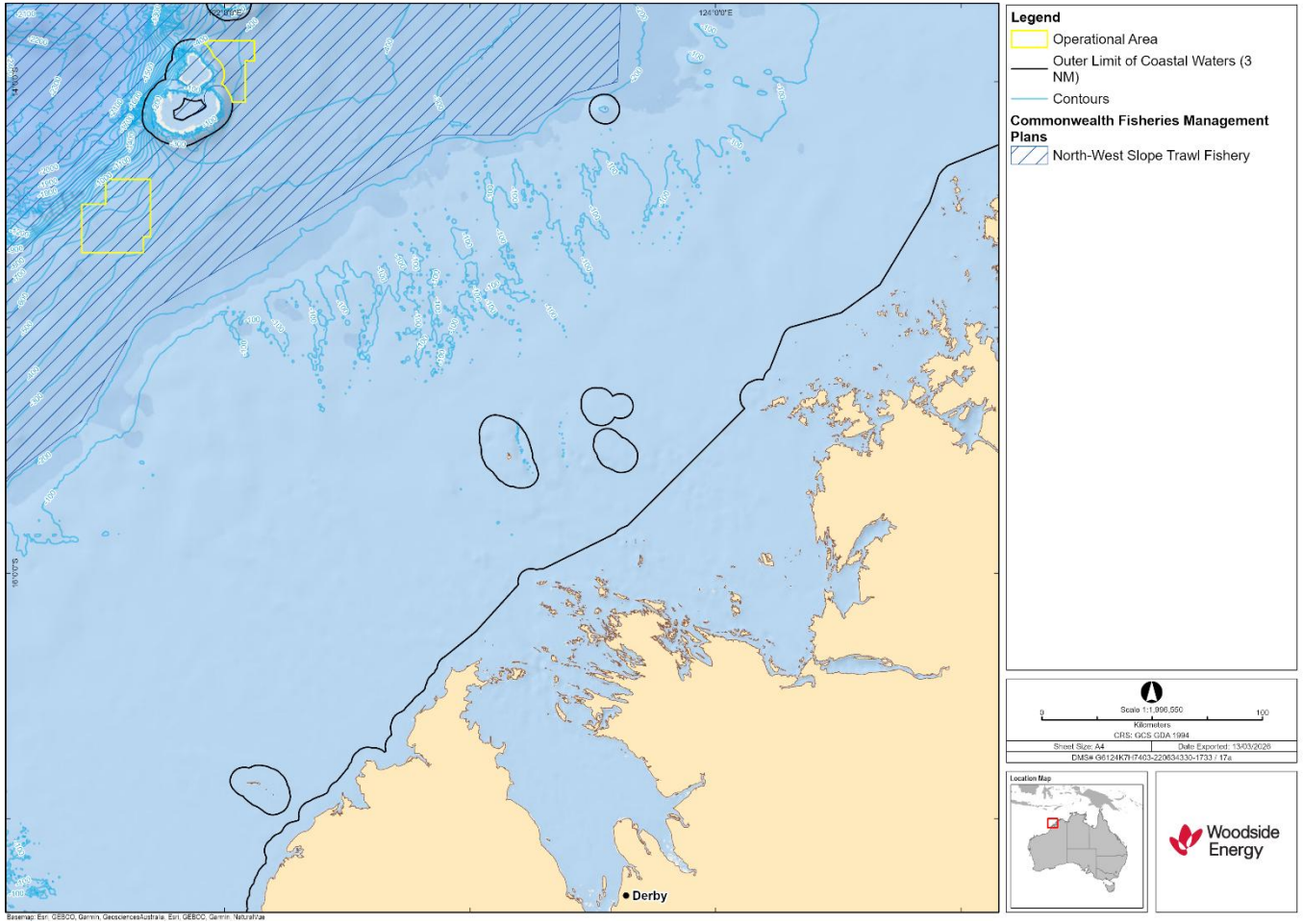


Figure 4-17: Commonwealth-managed fisheries with a potential for interaction with the Petroleum Activity

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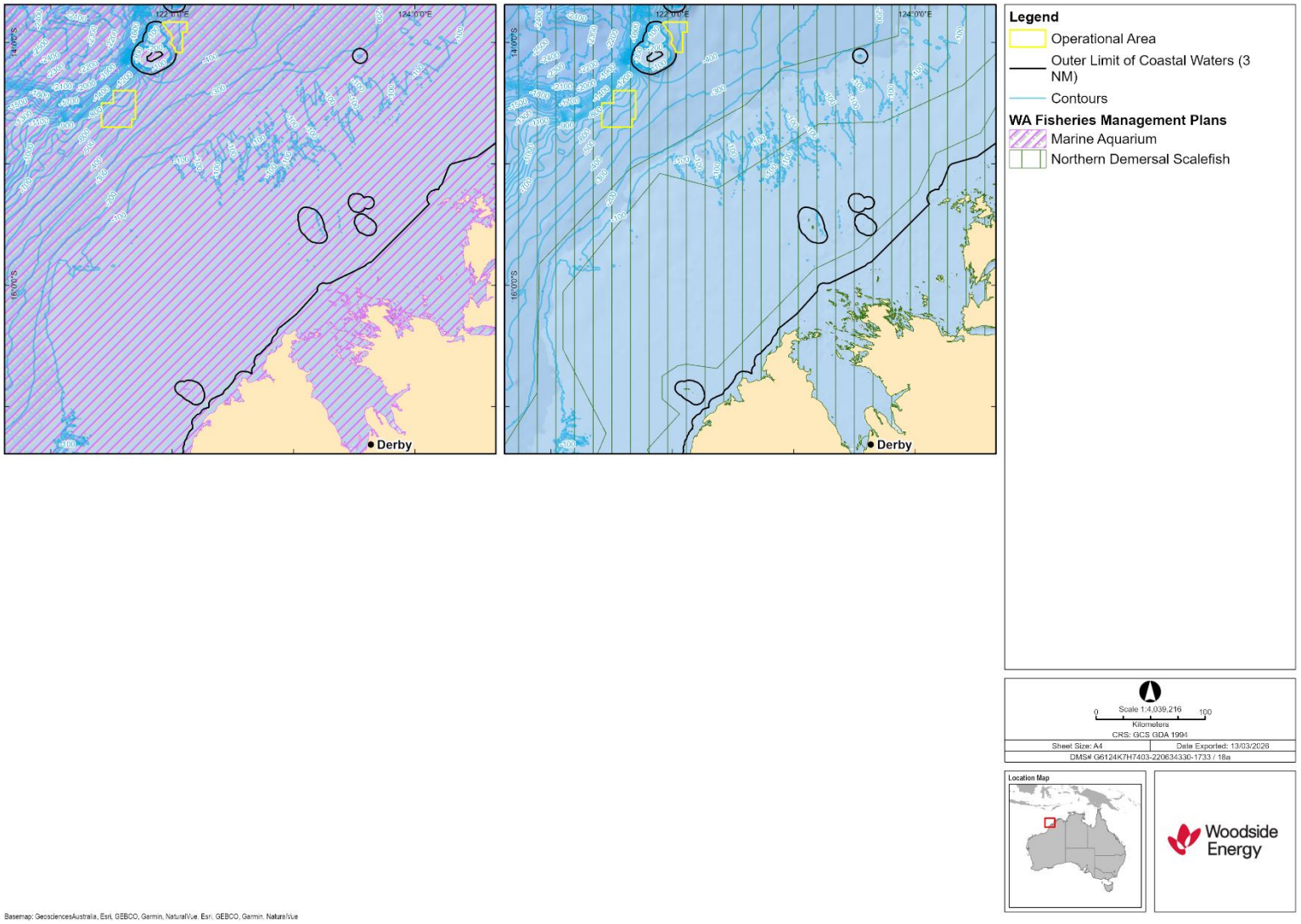


Figure 4-18: State-managed fisheries with a potential for interaction with the Petroleum Activity

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4.10.2 Traditional and customary fishing

Traditional or customary fishing is typically carried out in shallow coastal waters and/or areas with structures such as reef. The Western Australia Recreational Fishing Guide (DPIRD 2024) states that Indigenous 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.

Dugong, fish and marine turtles that move between coastal and Commonwealth waters are important components of the Indigenous people's culture and diet. Indigenous 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.

Woodside consulted with the Department of Foreign Affairs and Trade (DFAT), on the recommendation of AFMA to seek advice on the Traditional Indonesian fishing Memorandum of Understanding Box near Scott Reef. DFAT advised that their Indonesian team had no feedback on the proposed activities and confirmed that other branches of DFAT had received the information (refer to section 4.3.1 of Appendix F).Refer to Section 4.9.2 for coastally adjacent Indigenous groups which may undertake traditional fishing within the EMBA.

Indonesian fishers have traditionally visited reefs in the North-west Marine Region to collect target species such as trepan (sea cucumber), shark fin and other marine species that are economically significant. Indonesian fishers can fish within designated areas under the Australia-Indonesia Memorandum of Understanding (MoU) 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, which is overlapped by the Operational Area by 0.8% and the EMBA by 34%.

Traditional fishing was allowed within the 12 mile fishing zones that existed around a number of reefs or islets including Scott Reef, which is currently the principal reef to which Indonesian fishers regularly sail on a seasonal basis to harvest trepang and other reef species.

Traditional fishing methods in the NWMR are further described in the Master Existing Environment document in Appendix C.

4.10.3 Tourism and recreation

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. 2023).

Primary dive locations in the Kimberley region include the Rowley Shoals, including Mermaid Reef AMP, Scott Reef (5.6 km east of Operational Area Part A), Seringapatam Reef (19 km NNE of Operational Area Part A), Ashmore Reef AMP (195 km NE of Operational Area Part A) and Cartier Island (210 km NE of Operational Area Part A) (Newman et al. 2023).

FishCube data containing tour operator activity was acquired from DPIRD for the period 2018–2023 (inclusive) for five 10 nm CAES blocks that overlap the Operational Area (DPIRD 2023). The data show that fewer than three tour operators have been active within the 10 nm CAES blocks in 2021–2022, suggesting some recent activity in the area.

Tourism and recreation in the context of the wider North-west Marine Region is described in the Master Existing Environment document in Appendix C.

4.10.4 Commercial shipping

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 ~185 km from Operational Area Part B (Figure 4-19). Vessel tracking data suggest shipping is concentrated south west of Operational Area Part B, which is likely associated with Port Hedland port.

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4.10.5 Oil and gas facilities, infrastructure and other industries

The Master Existing Environment document in Appendix C describes current oil and gas development within the EMBA, also shown in Figure 4-20.

Table 4-25: Other oil and gas facilities within closest proximity of the Operational Area

Facility or asset	Operator	Distance / direction from Operational Area (km)
Icthys Project offshore facility (Inpex)	WA-50-L	130 km E
Prelude FLNG facility (Shell)	WA-44-L and WA-2-IL	145 km E

4.10.6 Submarine communication infrastructure

The Petroleum Activity is in a region with submarine communications infrastructure. The Vocus submarine fibre optic cable runs between Port Hedland and Darwin and lies within the Operational Area. The submarine communications infrastructure located within proximity to the Operational Area is presented in Figure 4-21

4.10.7 Defence

No defence areas overlap the Operational Area. One defence area overlaps the EMBA and is presented in Figure 4-22.

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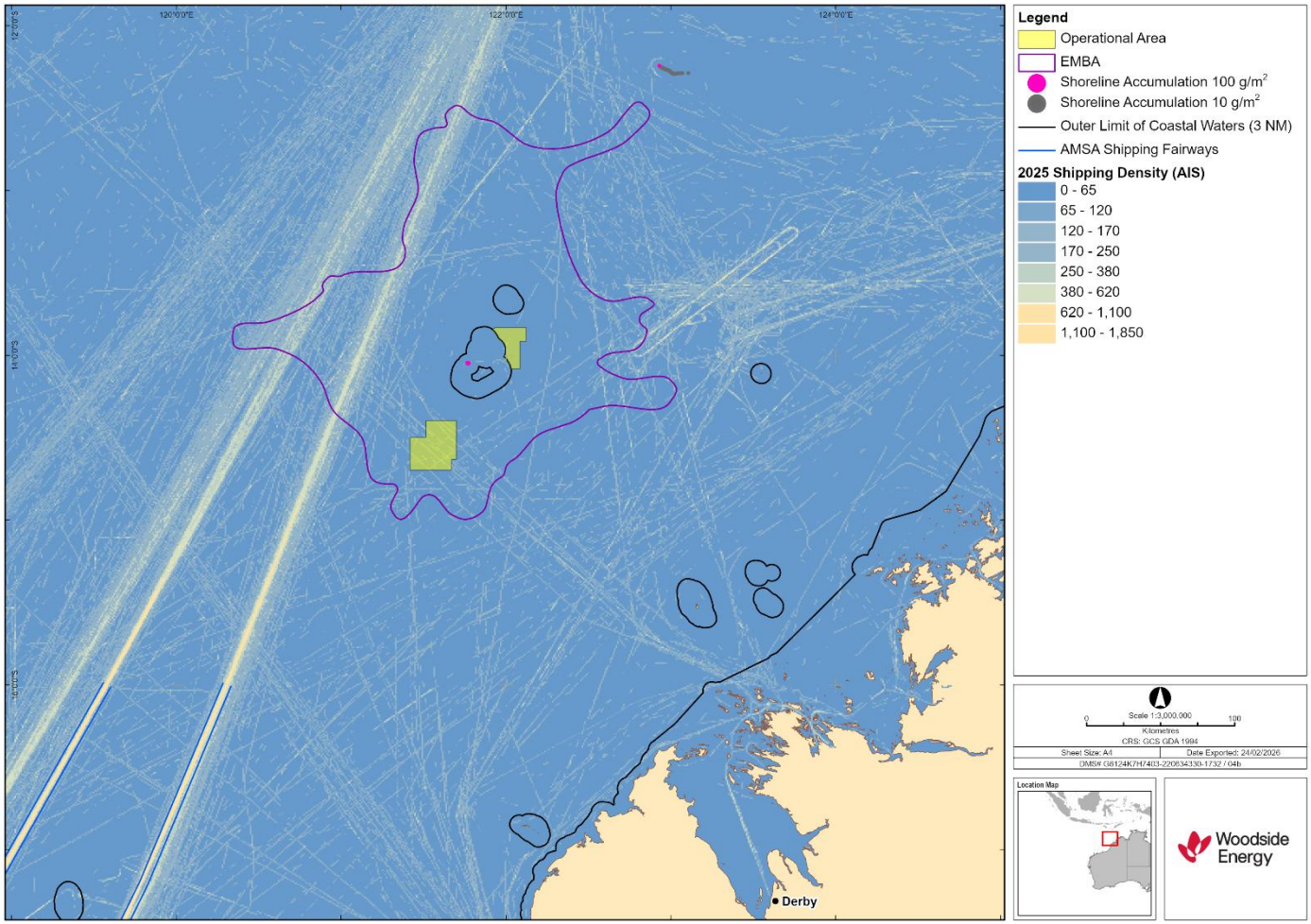


Figure 4-19: Vessel density map for the Operational Area and EMBA

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

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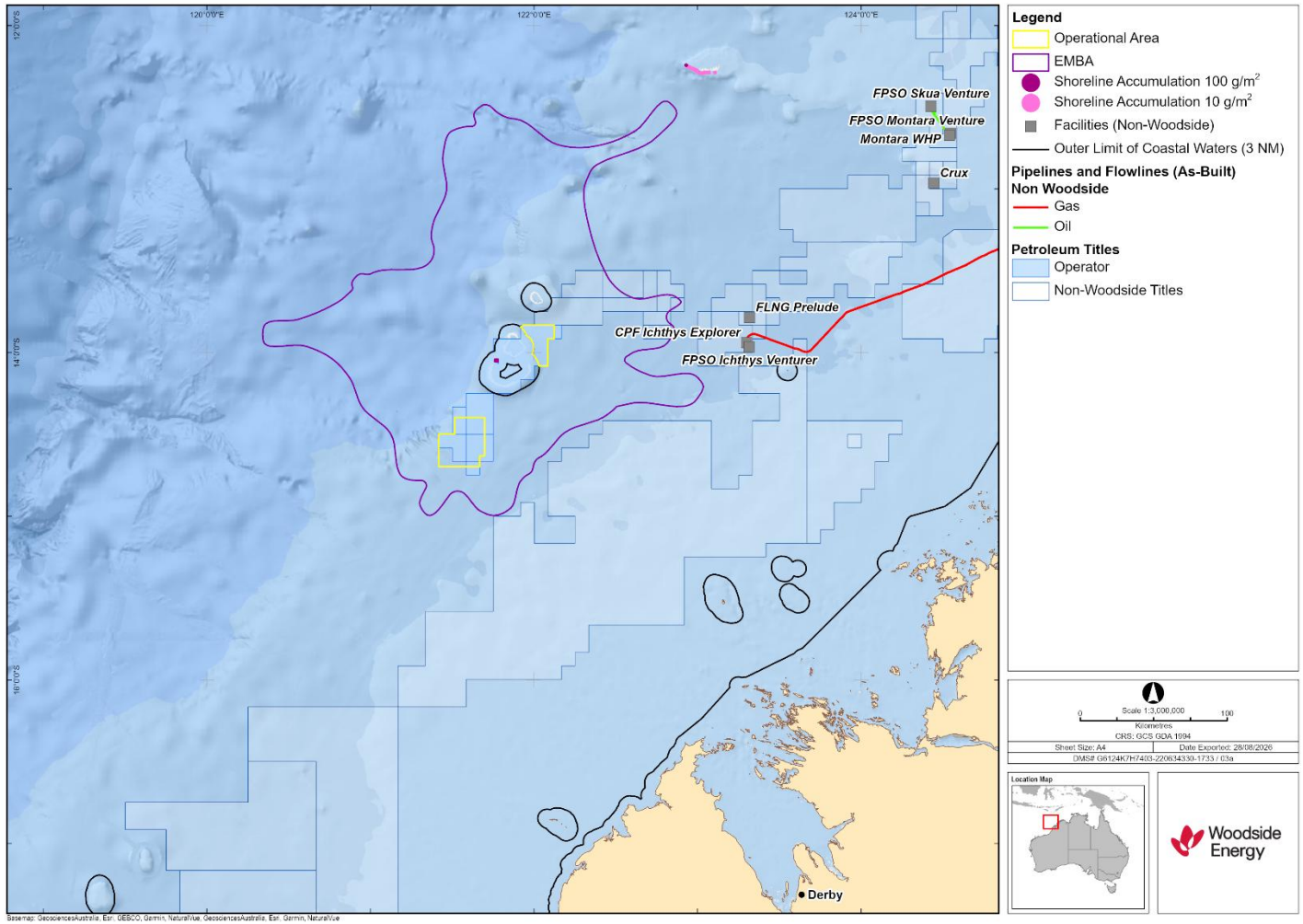


Figure 4-20: Oil and gas infrastructure within the Operational Area and EMBA

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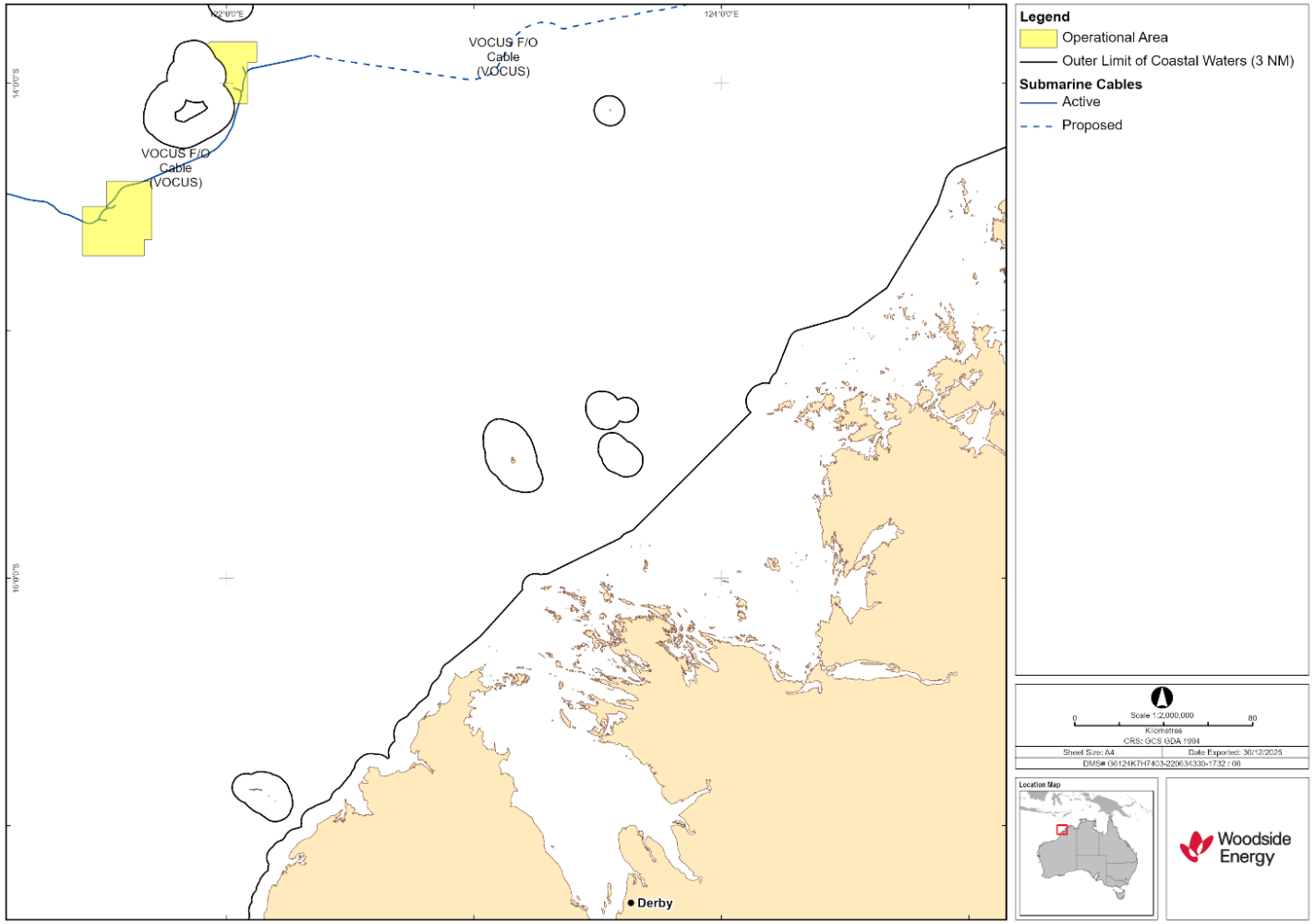


Figure 4-21: Submarine Communication Cables and Operational Area

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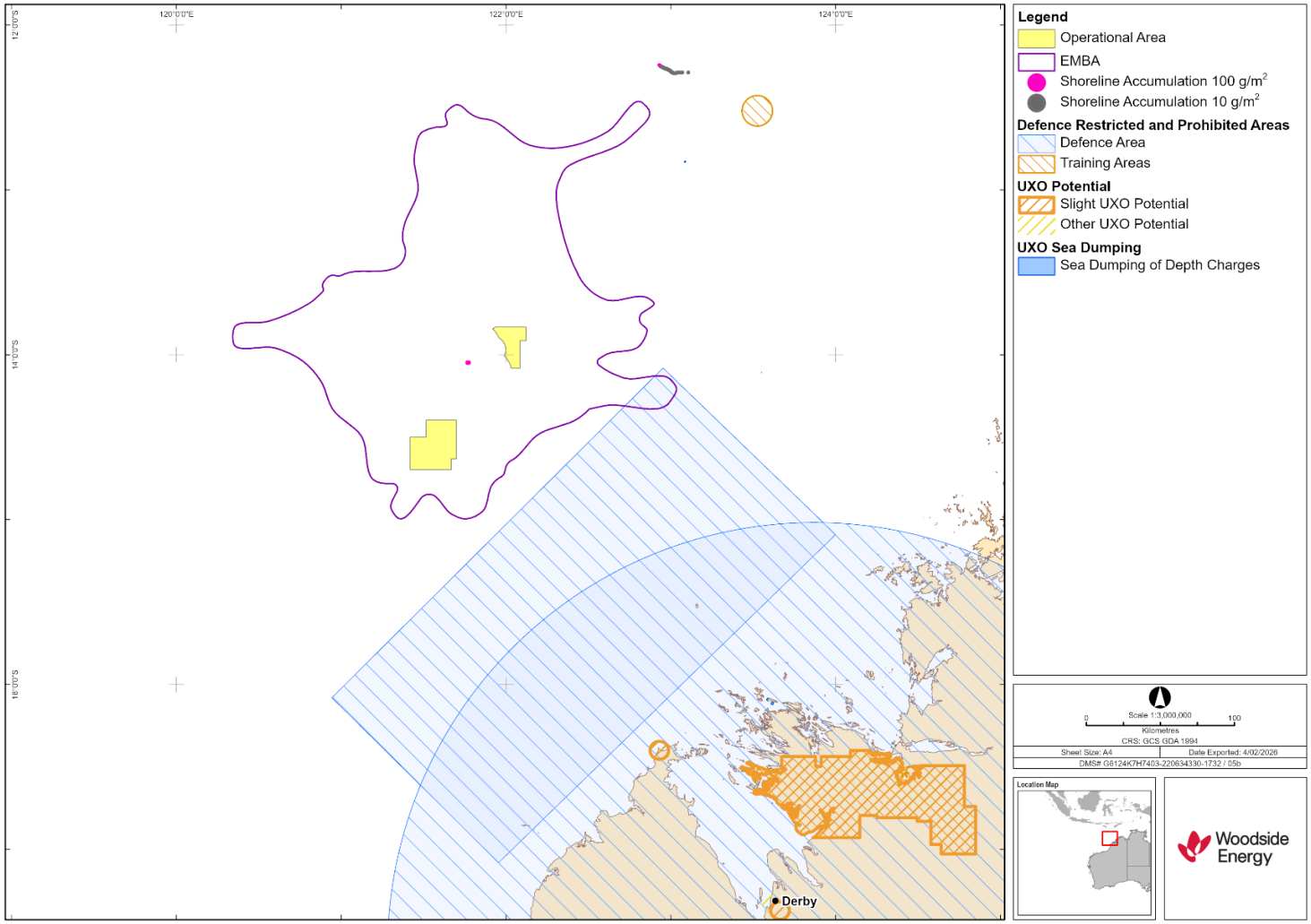


Figure 4-22: Defence areas within the EMBA

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5. STAKEHOLDER CONSULTATION

5.1 Summary

Woodside consults relevant persons in the course of preparing an EP in accordance with regulation 25 of the Environment Regulations. (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 both the Operational Area and the broader EMBA in undertaking consultation (see further discussion in Section 5.2). The broadest extent of the EMBA has been determined by reference to the highly unlikely event of a hydrocarbon release resulting from activities in the Operational Area (see Section 4).

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
- 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 people or organisations 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.

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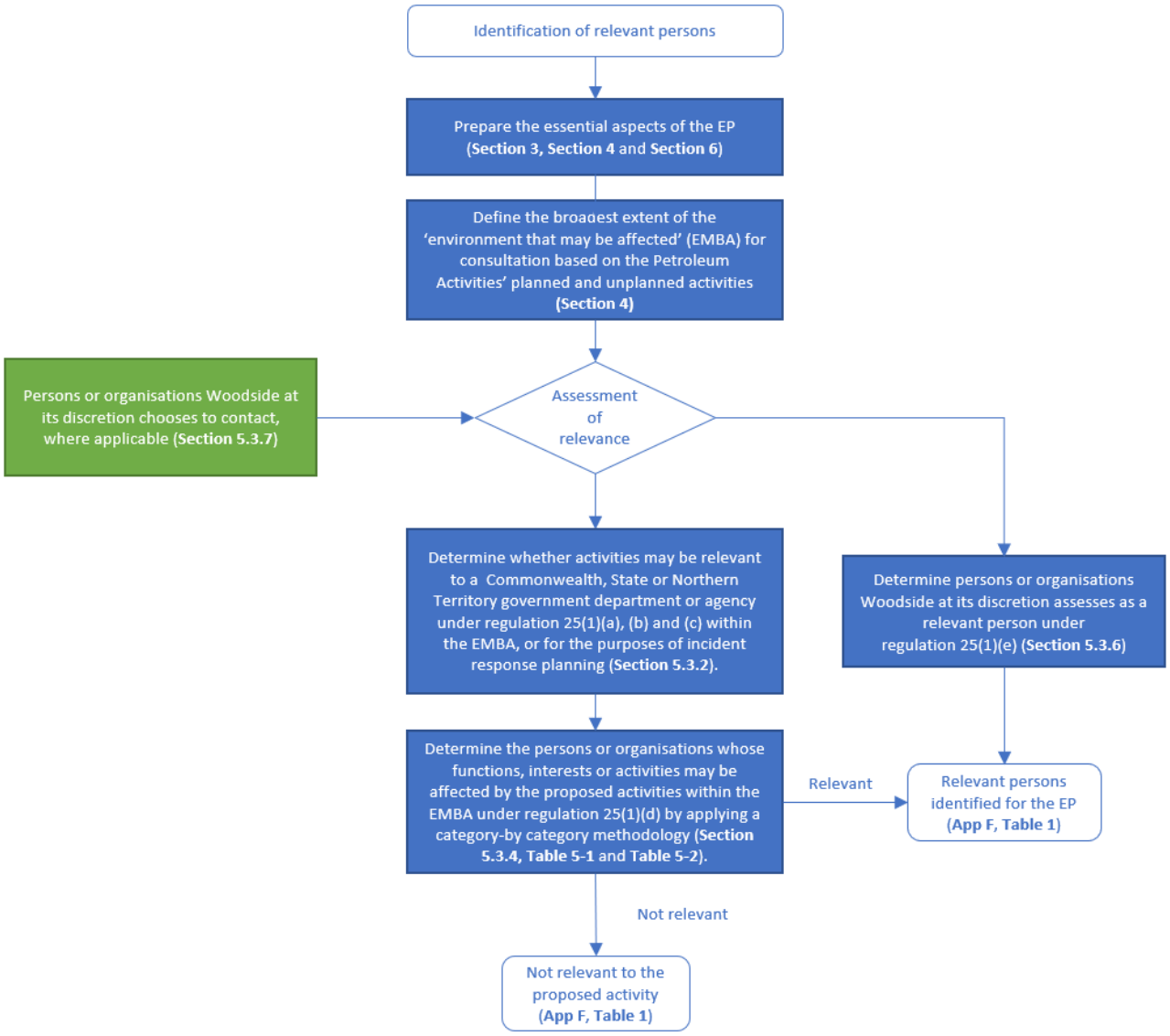


Figure 5-1: Overview of Woodside's methodology to identify relevant persons

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 Activity. The information in the consultation list has been captured from years of experience; it contains insights relating to the type of information particular persons or organisations want to receive during consultation, the appropriate method of consultation for relevant persons and includes appropriate contact details, which are reviewed and updated periodically.

Woodside acknowledges NOPSEMA's 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:

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- 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 Indigenous 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 5.5.3). 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 environment may be affected (EMBA) by risks and impacts from our activities (unplanned) (identified in Section 4.1and assessed in Section 6.9).

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
- is intended to reduce the environmental impacts and risks from the activity to ALARP and an acceptable level (regulation 4)

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- 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 7.10).

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

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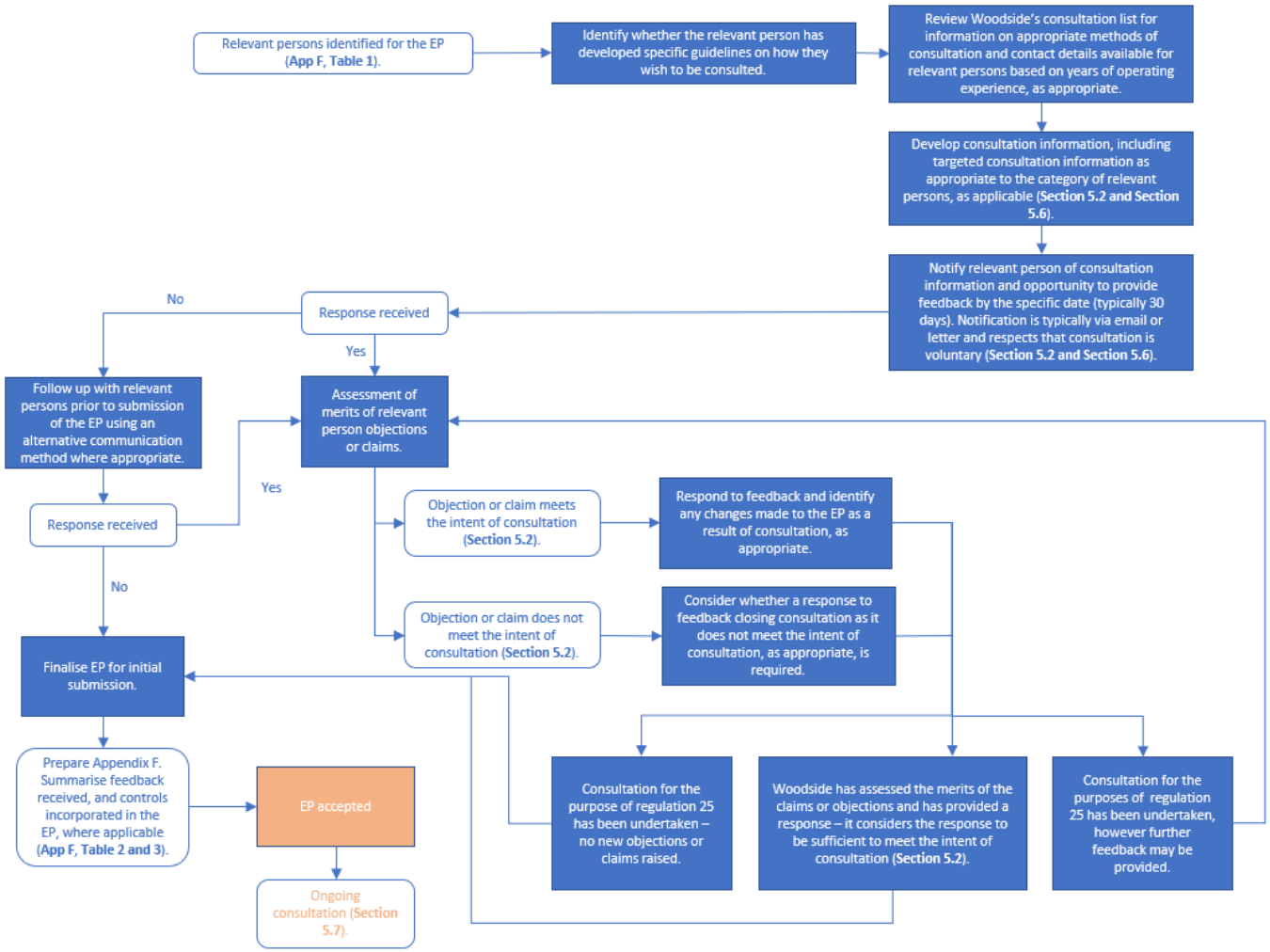


Figure 5-2 Overview of Woodside's consultation approach.

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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 2024
- 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 Mines, Petroleum and Exploration (DMPE):

- Guideline for the development of Petroleum, Geothermal and Pipeline Environment Plans in Western Australia (November 2024)
- 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 Department of Primary Industries and Regional Development (DPIRD):

- Guidance statement for oil and gas industry consultation with the Department of Fisheries

WA Department of Transport and Major Infrastructure (DTMI):

- 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

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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:

Government departments / agencies – marine	Agencies with legislated responsibilities for use of the marine environment.
Government departments / agencies – environment	Agencies with legislated responsibilities for the protection of the environment.
Government departments / agencies – industry	The legislated Department of the responsible Commonwealth, State or Northern Territory Minister for Industry.

- Woodside considers each of the responsibilities of the departments and agencies, determining whether those responsibilities overlap with potential risks and impacts specific to the Petroleum Activity in the EMBA. The assessment is both activity and location based.
- Woodside acknowledges the roles and responsibilities of government departments and agencies acting on behalf of various industry participants. For example, AMSA – Marine Safety is responsible for the safety of vessels and the seafarers who are operating in the domestic commercial shipping industry; and AHO is responsible for maritime safety and Notices to Mariners. To undertake 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 Petroleum Area 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

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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):

Functions	Refers to a power or duty to do something.
Interests	Conforms to the accepted concept of 'interest' in other areas of public administrative law and includes any interest possessed by an individual whether or not the interest amounts to a legal right or is a proprietary or financial interest or relates to reputation.
Activities	Broader than the definition of 'activity' in regulation 5 of the Environment Regulations and is likely be directed to what the relevant person is already doing.

Woodside's methodology for determining 'relevant persons' for the purpose of regulation 25(1)(d) includes consideration of:

- whether a person or organisation has functions interests or activities that overlap with the Operational Area and EMBA
- whether a person or organisation's functions, interests or activities may be affected by Woodside's proposed planned or unplanned activities.

On the topic of consulting outside of Australia's jurisdiction, when assessing potential impacts from planned and unplanned activities for this EP, it was determined there was an extremely low probability of an unplanned hydrocarbon release entering international waters specifically Indonesian waters. Consideration has been given to the functions, interests or activities that may be affected by the activities to be carried out, should a worst-case scenario eventuate, noting that modelling completed to predict the extent of potential impact is based on there being no mitigative controls in place. The more realistic scenario is that appropriate mitigation controls set out in Woodside's Oil Spill Preparedness and Response Mitigation Assessment and Oil Pollution First Strike Plans would be in place or will be implemented.

The obligation to consult must be construed in a practical and pragmatic way that makes this process reasonable and workable,4 and capable of being discharged within a reasonable time.5 The obligation to identify relevant persons for the purpose of consultation must be capable of practicable and reasonable discharge. The Regulations require relevant persons, and their interests, to be readily ascertainable to the Titleholder6 .In the case of Indonesia, which comprises extensive coastlines and potentially remote communities, Woodside considers potential relevant persons within these communities are not readily ascertainable, for reasons including that there are limited electronic records and public records which allow for the identification of potential functions, interests or activities e.g. fisheries, tourism licences and permits.

For example, there are no known licencing requirements either in Australia or in Indonesia for traditional Indonesian fishers, therefore, no publicly available information to identify and make contact with persons for consultation purposes. The logistics of access to these fishers, the nature of their activities and distance and remoteness from the Operational Area of this activity of over 1300 kilometres makes international consultation impractical to discharge from a reasonable time and efforts perspective.

Given the extremely low probability of potential impacts, the difficulty of identifying international individuals, and the impracticality of engaging where feedback on unplanned impacts is highly unlikely to inform proposed activities, consultation with international individuals is not required for the activities described in this EP.

Having regard to nature and scale and given the extremely low probability of potential impacts (which are the highly unlikely occurrence of spill traversing international waters), the current processes in place with Department of Foreign Affairs and Trade (DFAT) and the processes and consultation triggers set out in the Woodside's Oil Spill Preparedness and Response Mitigation Assessment and Oil Pollution First Strike Plans

[4] *Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 [89], [109], [136], [138], [141]*

[5] *Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 [136].*

[6] *Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 [136], [147], [153]*

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provide a mechanism for consultation in international waters that will be complied with at the appropriate time, if an incident occurs. In such circumstances, consultation with the DFAT discharges the requirement for consultation with international persons.

Woodside will continue to consult the DFAT for proposed activities outside of Australia's jurisdiction including in the event of a hydrocarbon spill that is likely to traverse international waters as described in the Oil Pollution Emergency Plan – Appendix D of this EP. The process for working with DFAT to manage activities and consultation in the highly unlikely event of a hydrocarbon spill that may traverse international waters is described in the Oil Pollution Emergency Plan – Appendix D of this EP.

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 Table 5-1 below and identification methodology applied as set out in Section 5.3.

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 *Commonwealth Fisheries Management Act 1991* (Cth) and the *Western Australian Fish Resources Management Act 1994* (WA), which may be amended from time to time. Commonwealth peak fishery representative bodies are identified by AFMA. WAFIC is the peak representative body for state fishers in Western Australia.
Recreational marine users and peak representative bodies	Charter boat, tourism and dive operators identified by DPIRD specific to the location of the proposed activity. Representative bodies are the recognised peak organisation(s) for recreational marine users.

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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 Indigenous Australians with cultural rights and interests or cultural functions or who perform cultural activities over particular lands and waters. Where an Indigenous 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 Native Title Act 1993 (Cth) by Traditional Custodians to represent their entire Traditional Custodian group (defined broadly by reference to descents from an ancestor set who were known to be the Traditional Custodians at the time of European colonisation) and their interests including, among other things, management and protection of cultural values.
Native Title Representative Bodies	A Representative Aboriginal/Torres Strait Islander Body (RATSIB) is a regional organisation appointed under the Native Title Act 1993 with prescribed functions, set out in Part 11 of the Native Title Act 1993, 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.
Local government and recognised local community reference/liaison groups or organisations	Local government body formed under the Local Government Act 1995 (WA). 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.
Research institutes and local conservation groups or organisations	Research institutes are government or private institutions that conduct marine or terrestrial research. Local conservation groups are local non-government organisation that regularly conduct conservation activities focused on the local environment or wildlife.

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

Category	Relevant person identification methodology
Commercial fisheries (Commonwealth and State) and peak representative bodies	Woodside assesses relevance for commercial fisheries (Commonwealth and State) and their representative bodies using the following next steps in its methodology: • Defining the parameters having regard to timing, location and duration of the proposed petroleum activity. • 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) • Woodside acknowledges WAFIC's consultation guidance[7], 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

[7] Consultation Approach for Unplanned Events - WAFIC

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	in an emergency scenario should only be undertaken if an incident occurs. • 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) Assessment of relevance: • 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: – directly consults fishery licence holders that are assessed as having a potential for interaction in the Operational Area – consults fisheries that are assessed as having a potential for interaction in the EMBA only in the event of an unplanned emergency scenario. • 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. Where a relevant fishery is identified, or where Woodside chooses to contact fisheries at its discretion, Woodside consults directly with individual licence holders in that fishery. • A Commonwealth fishery's representative body is assessed as relevant where the EMBA overlaps the fishery's management area, even where the fishery itself has been assessed as not relevant based on potential for interaction. This recognises the representative body's role in representing fishing entitlements and broader fisheries considerations within the management area. Recognised Commonwealth fishery representative bodies are identified by AFMA through information on its website. For State fisheries, representative bodies are assessed as relevant where the fishery they represent is assessed as relevant based on potential for interaction. WAFIC is the only recognised State fishery representative body.
Recreational marine users and peak representative bodies	Woodside assesses relevance for recreational marine users and peak representative bodies using the following next steps in its methodology: • Using Woodside knowledge and operating experience, applying knowledge of recreational marine users in the area. This assessment is both activity and location based. • Defining the parameters having regard to timing, location and duration of the proposed petroleum activity. • 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. Assessment of relevance: • 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. • 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.

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Titleholders and Operators	Woodside assesses relevance for other Titleholders and Operators using the following steps in its methodology: • Using GPInfo to determine overlap with other Titleholders' or Operators' permit areas within the EMBA. • Using Woodside knowledge and operating experience, applying knowledge of other operators in the area. • Woodside produces a map showing the outcome of this assessment. Assessment of relevance: • Titleholders and Operators whose permit areas are identified as having an overlap within the EMBA are assessed as relevant.
Peak industry representative bodies	Woodside assesses relevance for peak industry representative bodies using the following steps in its methodology: • 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. • Review of Woodside's existing consultation list. • 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. Assessment of relevance: • Peak industry representative bodies whose responsibilities are identified as having an overlap with Woodside's proposed activities within the EMBA are assessed as relevant.
Traditional Custodians (individuals and/or groups/entity) and Nominated Representative Corporations	To identify Traditional Custodian groups or individuals, Woodside: • Uses existing systems of recognition to identify Indigenous 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 Indigenous groups or entities) • Notifies and invites consultation with Indigenous people 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 • Requests the nominated representative body to forward the notifications and invitations to consult to their members (members are individual communal rights holders); • Requests advice as to other Indigenous groups or individuals that should be consulted • Advertises widely so as to invite self-identification and consultation by Indigenous groups and individuals. Further detail to Woodside's methodology is as follows. Woodside uses the databases of the National Native Title Tribunal: • To understand whether there are any Native Title Claims (historical or current) or determinations overlapping or coastally adjacent to the EMBA • 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. 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.

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	Where appropriate, contacting the relevant Native Title Representative Body to request a list of any Indigenous groups asserting Traditional Custodianship over an area of coastline adjacent to the EMBA. 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. In Victoria, using the Victorian Aboriginal Heritage Council data to determine whether there are any Registered Aboriginal Parties (RAP) appointed under the Aboriginal Heritage Act 2006 (Vic), that overlap or are adjacent to the EMBA. Indigenous groups or individuals identified by a Traditional Custodian, nominated representative corporation, Native Title Representative Body. Request to the PBC to distribute Woodside consultation materials through its membership. Woodside is unable to contact this membership through any other means. 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. 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 EMBAs 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. Assessment of relevance: • Traditional Custodian groups, entities or individuals and Nominated Representative Corporations who are identified through the above methodology and overlap or are coastally adjacent to the EMBA are assessed as relevant.
Native Title Representative Bodies	Woodside assesses relevance for Native Title Representative Bodies using the following steps in its methodology: • A Representative Aboriginal/Torres Strait Islander Body (RATSIB) is a regional organisation appointed under the Native Title Act 1993 with prescribed functions set out in Part 11 of the Native Title Act 1993, 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. • Review of National Native Title Tribunal RATSIB areas that overlap or are coastally adjacent to the EMBA. Assessment of relevance: • Where the area for which a Native Title Representative Body is recognised under the Native Title Act 1993, overlaps with the EMBA or is coastally adjacent to the EMBA, Woodside will assess the Native Title Representative Body as relevant.
Local government and recognised local community reference/liaison groups or organisations	Woodside assesses relevance for local government and recognised local community reference/liaison groups or organisations using the following steps in its methodology: • 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. • 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

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	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. • 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). Assessment of relevance: • The local government whose defined area of responsibility overlaps the EMBA is assessed as relevant. • 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.
Other non-government groups, organisations or individuals	Woodside assesses relevance for other non-government groups, organisations or individuals using the following steps in its methodology: • Review of Woodside's existing consultation list. • 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. • Organisation has a publicly available statement (or purpose) that clearly describes their collective functions, interests or activities. • 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. • 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. Assessment of relevance: • 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. • Individual demonstrates their functions, interests or activities may be impacted will be assessed as relevant.
Research institutes and local conservation groups or organisations	Woodside assesses relevance for research institutes and local conservation groups or organisations using the following steps in its methodology: • Review of Woodside's existing consultation list. • Website search for research institutes that may operate within the EMBA. This assessment is both activity and location based. • Website search for local conservation groups or organisations that regularly conduct conservation activities within the EMBA. Assessment of relevance: • 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.

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	• 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.

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).

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 5-1 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.

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5.4.1 Sufficient information

Woodside produces a Consultation Information Sheet for each EP. This is provided to relevant persons and organisations and is also available on Woodside's website for interested parties to access and to provide feedback on. The Consultation Information Sheet typically includes:

- a description of the proposed petroleum activity
- the Operational Area
- where the activity will take place
- the timing and duration of the activity
- a location map of the Operational Area and EMBA
- a description of the EMBA
- relevant exclusion zones
- a summary of relevant risks and mitigation and management control measures relevant to the proposed petroleum activity OR proposed greenhouse gas 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 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

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- 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 Government departments / agencies – environment Government departments / agencies – industry	Woodside applies NOPSEMA's guideline for engagement with Commonwealth government departments or agencies (GL1887 – Consultation with Commonwealth agencies with responsibilities in the marine area – January 2024) 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.
Commercial fisheries and peak representative bodies Recreational marine users 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**: The Western Australian Department of Primary Industries and Regional Development (DPIRD) has responsibility for managing the Fish Resources Management Act 1994 and Aquatic Resources Management Act 2016, 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. **Peak representative bodies**: Email is used as the primary form of communication with commercial fishery and recreational marine user peak representative bodies in the ordinary course of business. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used on request.
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,

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	such as email, phone calls, meetings and community forums. Other forms of communication are used on request.
Native Title Representative Bodies	There are many forms of communication that Woodside uses on a case-by-case basis and as appropriate to or requested by the specific group, such as email, phone calls, meetings and community forums. Other forms of communication are used on request.
Historical heritage groups or organisations	NOPSEMA's guideline (GL1887 – Consultation with Commonwealth agencies with responsibilities in the marine area – January 2024) 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 guideline (GL1887 – Consultation with Commonwealth agencies with responsibilities in the marine area – January 2024 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:

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- Regulation 30 sets out a public consultation period of 30 days.
- The Department of Mines, Petroleum and Exploration (DMPE) *Guidelines for Consultation with Indigenous People by Mineral Explorers* directs a period of 21-30 days of consultation with traditional owners.

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*..."[8]

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).[9] Consultation is a "*real world activity*" and must be capable of reasonable discharge.[10] 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.[11]

When the Titleholder demonstrates that it has provided sufficient information and a reasonable period for consultation, then regulation 25 consultation requirements are met.[12] 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

[8] *Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [136].*

[9] *Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 [89], [98], [103]-[104] and [109].*

[10] *Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at [89].*

[11] *Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at [96] and [103].*

[12] *Explanatory Statement, Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023, page 29.*

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and their function, interest and activity that may be affected, will inform the manner of consultation and the reasonable period to be afforded.[13]

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.[14] 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 it is complete.

Appendix F 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 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 Traditional Custodians

To comply with regulation 25, Woodside identifies and consults 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).

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,[15] 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." [16]

"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"[17] (emphasis added).

[13] *Explanatory Statement, Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023, page 30 and Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at [153].*

[14] *Cooper v National Offshore Petroleum Safety and Environmental Management Authority (No 2) [2023] FCA 1158 at paragraph [11]; Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at [153].*

[15] *Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [95], [98], [103]-[104] and [109].*

[16] *Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [98].*

[17] *Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [96].*

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"…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" [18] (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.19 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 5.25.5.2).

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 NTA) have a designated role of representing the views of their member Traditional Custodians. They have established methods for engaging with their own members. Woodside will not undermine the purpose and authority of nominated representative corporations by requiring full group meetings where the nominated representative corporations have not requested engagement of members via full group meetings. 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 Indigenous Affairs 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 Indigenous Affairs team exercises its professional judgement and is respectful of long-standing relationships (where in place) when considering consultation with Traditional Custodian groups. The Indigenous Affairs 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 ('not relevant' for this EP) 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 Traditional Custodian 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.[20] 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

[18] *Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [104].*

[19] *Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [47] and [48].*

[20] *Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [95].[104].[153].*

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activities, to self-identify (Section 5.5.4), and to provide feedback to inform the management of environmental impacts and risks.

Using these processes, Woodside communicates information about EPs by:

- 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 Indigenous Affairs 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. Indigenous Australian 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 Indigenous people] than the national average across all geographical locations*" (Social media mob: being Indigenous online, Professor Bronwyn Carlson (2018)).
- For ongoing consultation post Regulation 25 consultation, Woodside supports ongoing engagement with Traditional Custodians. Woodside is committed to ongoing engagement and support to care for and manage country, including Sea Country.
- basing members of its Indigenous Affairs team in Karratha and Roebourne who serve as on-Country points of contact for Traditional Custodian 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 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 Indigenous Affairs 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*"[21]. 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[22]. When the Indigenous Affairs team is told that a particular value is cultural by an individual Traditional Owner, 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.

[21] *Munkara v Santos NA Barossa Pty Ltd (No 3) [2024] FCA 9 at [205]*

[22] *Munkara v Santos NA Barossa Pty Ltd (No 3) [2024] FCA 9 at [205]*

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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 5.3).

Specific to Woodside's approach for identifying relevant Traditional Custodians, Woodside's Indigenous Communities Policy and consultation approach is guided by Traditional Custodians by directing consultations through their nominated representative corporation. This has been implemented by Woodside through consultation with a nominated representative corporation, where that corporation has advised Woodside that it acts as the representative body for a Traditional Custodian group and has requested that Woodside engage with it as the representative body for that Traditional Custodian group.

Woodside asks nominated representative corporations (such as PBCs) and Native Title Representative Bodies to identify individuals that should be consulted, and enables individuals to self-identify in response to national and local advertising, social media and community engagement opportunities (Section 5.5.7). 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 5.5.7 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 of the Native Title Representative Body, the PBC (or nominated representative) and notification through newspapers. The notification process has been selected as a respectful, practical and pragmatic analogue for consultation with Indigenous peoples, 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*)[23].

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 Traditional Custodians 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

[23] *Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193, at [104]*

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recognises the process is voluntary and Woodside cannot compel them to do so, nor seek to audit the representative entities for compliance with any request.

- Representative entities cannot provide membership details to Woodside due to individual confidentiality requirements.
- Woodside requests advice as to who else Woodside should be consulting but recognises the process is voluntary and cannot compel nominated representative corporations to provide this information.
- Modern Indigenous engagement practises rely on the building and maintaining of respectful relationships. 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 Traditional Custodians, so that information is provided in a form that is readily accessible and appropriate. The targeted Summary Information Sheet is developed and reviewed by Woodside's Indigenous Affairs 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 Indigenous Affairs 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.

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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 Traditional Custodians based on the Tipakalippa Appeal.

In relation to Traditional Custodian relevant persons (and all relevant persons), Woodside has discharged its duty under regulation 25 of the Environment Regulations. Woodside considers that consultation under regulation 25 is complete (Section 5.4.3).

5.6 Providing feedback and assessment of merit of objections or claims

There are a number of ways in which feedback can be provided. Feedback can be provided through the Woodside feedback email or via the Woodside feedback toll free phone line as outlined in the Consultation Information Sheet and the Woodside website. Where appropriate, consultation may also be supported by phone calls or meetings. An EP feedback form is also available on Woodside's website enabling relevant persons 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.

During consultation, relevant persons may seek to introduce other issues (such as agreements) that are not specific to EP consultation. While concepts of agreements may be associated with broader consultation processes, consultation for specific EPs can occur in parallel.

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 and 5.3.7). 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.

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5.7 Ongoing consultation

Consultation can continue to occur during the life of an EP, including after an EP has been accepted by NOPSEMA.

As per Woodside's ongoing consultation approach (refer to Section 7.10), feedback and comments received from relevant persons continue to be assessed and responded to, as required, throughout the life of an EP, including during its assessment and once accepted, in accordance with the intended outcome of consultation.

Should consultation feedback be received following the acceptance of an EP that identifies a measure or control that Woodside considers requires implementation or updates to meet the intended outcome of consultation, Woodside will apply its Management of Change and Revision process as appropriate (see Section **7.8**).

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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.

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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 third-party vessels	6.8.1	F	Social and Cultural – Temporary localised impact not significant to areas/items of cultural significance.	-	-	Broadly acceptable
Physical presence: disturbance to seabed habitat from geotechnical and geophysical surveys	6.8.2	F	Environment – No lasting effect, localised impact not significant to environmental receptors	-	-	Broadly acceptable
Routine acoustic emissions: generation of noise from survey vessels and from geophysical and geotechnical survey equipment	6.8.3	E	Environment – Localised and low-level impact on environmental feature(s) or area(s) of low significance	-	-	Broadly acceptable
Routine light emissions: external lighting on survey vessel	6.8.4	F	Environment – No lasting effect, localised impact not significant to environmental receptors	-	-	Broadly acceptable
Routine atmospheric and greenhouse gas emissions: fuel combustion	6.8.5	F	Environment – No lasting effect, localised impact not significant to environmental receptors	-	-	Broadly acceptable
Routine and non-routine discharges to the marine environment from survey vessels	6.8.6	F	Environment – No lasting effect, localised impact not significant to environmental receptors	-	-	Broadly acceptable
Unplanned activities (accidents, incidents, emergency situations)						
Unplanned hydrocarbon release: vessel collision	6.9.2	B	Environment – Major impact on environmental feature/s or area/s, such as impact on feature/area of national importance with limited ability to recover.	1	M	Acceptable if ALARP
Physical presence: interaction with marine fauna	6.9.3	E	Environment – Slight and low-level impact on environmental feature/s or area/s of low significance.	2	M	Acceptable if ALARP
Physical presence: disturbance to seabed from dropped objects and equipment loss	6.9.4	F	Environment – No lasting effect (less than one month); localised impact not significant to environmental receptors (e.g. benthic habitats).	3	M	Acceptable if ALARP

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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: loss of solid hazardous and non-hazardous wastes	6.9.5	F	Environment – Slight, short-term local impact (less than one year) on species, habitat (but not affecting ecosystems function), physical or biological attributes.	3	M	Acceptable if ALARP
Unplanned discharges: deck and subsea spills from geotechnical and geophysical equipment	6.9.6	F	Environment – Slight, short-term local impact (less than one year) on species, habitat (but not affecting ecosystems function), physical or biological attributes.	3	M	Acceptable if ALARP
Physical presence: introduction of invasive marine species	6.9.7	B	Reputation - National concern and / or global interest. Serious, medium to long-term impact to reputation and brand, investment attractiveness, or social licence to operate. Venture and / or asset operations restricted	0	M	Acceptable if ALARP

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6.2 Impact and risk analysis evaluation

As required by Regulations 21(5) and 21(6) of the Environment Regulations, the following analysis and evaluation demonstrates that the identified impacts and risks associated with the Petroleum Activity are reduced to ALARP and are of an acceptable level, and considers all operations of the activity, including potential emergency conditions.

Impacts and risks identified during the ENVID workshops (including decision type, current risk level, acceptability of impacts and risks, and tools used to demonstrate acceptability and ALARP) have been divided into two broad categories:

- planned (routine and non-routine) activities
- unplanned events (accidents, incidents or emergency situations).

Within these categories, impact and risk assessment groupings are based on environmental aspect (e.g. emissions, physical presence etc). For all hazardous events considered, the worst-case risk was assumed.

The ENVID identified 7 impacts and 6 risks associated with the Petroleum Activity. Planned activities and unplanned events are summarised in Table 6-1. The assigned risk ratings were determined with controls in place as described in Section 2.3.6.

The analysis and evaluation for the Petroleum Activity indicates that current environmental risks and impacts associated with the activity are reduced to ALARP and are of an acceptable level, as discussed further in Sections 6.8 and 6.9.

The environmental impacts and risks for all aspects are summarised in Table 6-1.

6.3 Impacts and risks not deemed credible or outside the scope of this Environment Plan

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:

6.3.1 Bunkering

No bunkering at sea will be performed. Any bunkering will be performed during a port call, out of the scope of this EP. Consequently, risks associated with this activity are not considered applicable to this EP.

6.3.2 Underwater noise emissions from helicopters

No helicopter transfer are planned. These may only occur in emergency situations.

6.3.3 Underwater noise emissions from remotely operated vehicles

It is not credible that noise from ROV operations at the seabed would add to levels of noise emanating from survey vessels just below the sea surface, or noise emissions from equipment. Noise emissions from these sources would not add to cumulative sound fields from survey vessels and equipment to any discernible extent. As such, noise emission from these sources has not been considered further in this EP.

6.4 Cumulative impacts

Woodside has assessed the cumulative impacts of the Petroleum Activity in relation to other relevant petroleum and greenhouse gas activities that could realistically result in overlapping temporal and spatial extents.

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6.5 Indirect impacts from activities outside the Operational Area

For the Petroleum Activity, the potential 'indirect' environmental impacts and risks evaluated are those associated with mobilisation/demobilisation of the vessels to the Operational Area, which have been considered in the environmental impact assessment in Sections 6.8 and 6.9. Due to the nature and scale of these potential indirect environmental impacts and risks (such as fuel usage, interaction with other marine users and usual vessel discharges), and the regulatory frameworks and applicable maritime regulations in place to manage them, Woodside considers the potential impacts and risks from mobilisation and demobilisation of the survey vessels to be inherently ALARP in their current state. Therefore, Woodside considers that standard vessel operations are appropriate to manage the potential impacts and risks from mobilisation and demobilisation of the vessels to a level that is acceptable.

6.6 Environmental performance outcomes, standards and measurement criteria

This 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 an acceptable level.

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 legislation, codes and standards, good industry practice and professional judgement outlined in Section 2.3.5 and Section 2.3.6 as part of the acceptability and ALARP justification process.

The EPOs, EPSs and MC are presented throughout this section and in Appendix G (Oil Spill Preparedness and Response). A breach of these EPOs or standards constitutes a 'Recordable Incident' under the Environment Regulations (refer to Section 7.11.4). For the physical and biological receptors within the EMBA, Woodside has set EPOs that are consistent with the Matters of National Environmental Significance – Significant impact guidelines 1.1 (Department of the Environment, Water, Heritage and the Arts 2013). 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 2.4.2), applied to the aspects and receptors in Section 6. The EPOs for planned activities have been set at a level of environmental performance that considers the planned activities and associated level of environmental impact.

For social receptors, including fishing and other commercial activities, the EPOs that have been set in a manner so that the activities undertaken as a part of the Petroleum Activity should not interfere with other marine users, to a greater extent than is necessary for the exercise of right conferred by the titles granted.

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6.7 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													

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
Environmental Value(s) Potentially Impacted
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 2.3.6).

Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[24]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
ALARP/hierarchy of control tools used – Section 2.3.5				
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	If control is adopted, reference to Control No. provided.

[24] *Qualitative measure*

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Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[24]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
			benefits), the control will not be adopted.	
ALARP statement: Made on the basis of the environmental impact/risk assessment outcomes, use of the relevant tools appropriate to the decision type (Section 2.3.4.2) and a proportionality assessment in accordance with Regulation 34(b).				

Demonstration of acceptability
Acceptability statement: Made on the basis of applying the process described in Section 2.4 in accordance with Regulation 34(c)

EPOs, EPS and MC			
EPOs	***Control measures***	***EPSs***	***MC***
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 environment will be measured. M: Performance against the outcome will be measured through implementation of the controls via the MC. A: Achievability/feasibility of the outcome demonstrated via discussion of feasibility of controls in ALARP demonstration. Controls are directly linked to the outcome. R: The outcome will be relevant to the source of risk/impact and the potentially impacted environmental value25 T: The outcome will state the timeframe during which the outcome will apply or by which it will be achieved.	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).

[25] Where impact/consequence descriptors are presented within EPOs the descriptors are aligned with the definitions provided in the Woodside Risk Matrix (refer Section 2).

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6.8 Planned activities (routine and non-routine)

6.8.1 Physical presence: interaction with third party vessels

Context		
Survey vessels- Section 3.8	Socio-economic environment- Section 4.9	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
Presence of vessels (and equipment) excluding or displacing other marine users from the Operational Area						X	A	F	-	-	LCS GP PJ	Broadly Acceptable	EPO 1 EPO 2

Description of source of impact

The geophysical and geotechnical surveys are each expected to take approximately 20-60 days to complete, this may occur as a single campaign or split over a number of campaign but up to a maximum of 90 days per year as defined in Section 3.5.

Vessels do not plan to anchor within the Operational Area during activities and instead maintain positioning using thrusters, where required. The physical presence and movement of survey vessels within the Operational Area has the potential to displace other marine users. All vessels will display navigational lighting and external lighting on a 24-hour basis, as required for safe operations.

It is feasible that two survey vessels may be present in the Operational Area at any one time.

Geophysical survey equipment is towed at a distance of approximately three times the water depth out from the stern. Geotechnical equipment is deployed near vertical and is therefore, in close proximity to the working vessel.

There is the potential for the survey vessels and associated survey equipment to temporarily displace third party vessels i.e. commercial fishing, aquaculture and shipping vessels, including vessels associated with oil and gas activities and recreational fishing vessels, from within the area where the vessel is directly operating.

Impact assessment

Environmental value(s) potentially impacted

Displacement of commercial fishing and aquaculture

A number of Commonwealth and State managed fisheries occur in the region (Section 4.10.1**).**

There are 4 Commonwealth and 12 State managed fisheries with management areas that overlap the Operational Area. One Commonwealth (the North West Slope Trawl Fishery) and three State-managed fisheries (Marine Aquarium Managed Fishery, Northern Demersal Scalefish Fishery and Tour Operator) are considered to have potential for interaction with the Petroleum Activity, based on their catch effort drawn from ABARES (Commonwealth) and FishCube (WA state) data (Table 4-24, Section 4.10.1).

The overlap of the Operational Area with commercial fishing activity may temporarily exclude fishers from the area resulting in a potential displacement and potential loss of gear (particularly in relation to deployed traps). The presence of survey vessels does not present a hazard to bottom trawl fisheries due to the low risk of equipment entanglement and subsequent equipment damage/loss.

The presence of vessels in the Operational Area would likely be of short duration, potentially resulting in a minor interference (i.e. navigational hazard) and localised displacement/avoidance by commercial fishing vessels within the immediate vicinity of the survey vessels. It is also noted that there was no direct response from commercial fisheries during the consultation period, so the potential impacts of survey activities on commercial fisheries is considered minor and temporary.

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No permanent infrastructure is intended to be installed or remain in-situ as part of the Petroleum Activity. Therefore, there is no ongoing entanglement or equipment damage risk to bottom trawl fisheries.

Displacement of recreational fishing and tourism

Tourism and recreation activity in the Operational Area is expected to be infrequent, with recreational and charter fishing from vessels visiting the Scott Reef Nature Reserve the only tourism and recreation activities identified as potentially occurring near the Operational Area. The Operational Area do not overlap AMPs. Recreational and charter fishing from vessels is largely undertaken using line fishing methods. Consultation identified that recreational and charter fishing occurs within and around the Operational Area (Section 5). However, given the temporary and localised nature of the Petroleum Activity, impacts to recreational and charter fishing are expected to be localised and of no lasting effect.

Traditional fishing is permitted within the MoU Box (see Section 4.10.2) surrounding several reefs and islets, including Scott Reef, with fishing effort peaking between July and October due to favourable wind conditions (ERM, 2009). Traditional Indonesian fishing activity is concentrated in shallow reef-associated habitats, including reef flats, lagoons and upper reef slopes, with sea cucumber harvesting occurring from several metres to more than 30 m water depth (Prescott et al., 2016). The temporary presence of survey vessels in the Operational Area may result in minor, localised interference with, or displacement of, traditional fishing activities in the immediate vicinity of the vessels.

Cultural features and heritage values

Refer to Section 6.11 for an assessment of potential impacts to cultural features and heritage values from the Petroleum Activity. Related control measures demonstrate that impacts are reduced to ALARP and are of an acceptable level have been captured in Section 6.11 below.

Displacement to commercial shipping

The presence of survey vessels and towed equipment could potentially cause temporary disruption to commercial shipping. AMSA have introduced a series of shipping fairways within which commercial shipping vessels are advised to navigate. The fairways are not mandatory; however, AMSA strongly recommends commercial shipping vessels remain within the fairway when transiting the region. The use of shipping fairways is considered to be good seafaring practice, with Australian ship reporting (AUSREP) data from AMSA indicating cargo ships and tankers routinely navigate within the established fairways.

No marine fairways intersect with the Operational Area; the nearest fairway is ~185 km from Operational Area Part B.

No concerns from AMSA regarding the activity were raised during the consultation period. The potential impacts to commercial shipping vessels are expected to be limited to a temporary and localised displacement of vessels as they make slight course alterations to avoid the survey vessels (and associated equipment).

Oil and gas

There are no oil and gas platforms within 50 km of the Operational Area. The nearest facility not operated by Woodside, is the Ichthys Project offshore facility (Inpex), which lies ~130 km East of Operational Area Part A. Given the distance between the Operational Area and petroleum activities undertaken by other operators, no impacts to other operators will occur as a result of the physical presence of the vessels.

Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[26]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
Legislation, codes and standards				
Vessels to adhere to the navigation safety requirements and any subsequent Marine Orders: • Marine Order 21 (Safety and emergency arrangements) • Marine Order 27 (Safety of navigation and radio equipment)	F. Yes. CS: Minimal cost. Standard practice.	Compliance with Marine Orders 21, 27 and 30 is required under Australian regulations and implementation is standard practice for commercial vessels as applicable to vessel size, type and class. Compliance reduces the likelihood of adverse interactions	Benefits outweigh cost/sacrifice. Control is also standard practice.	Yes C 1.1

[26] *Qualitative measure*

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Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[26]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
• Marine Order 30 (Prevention of collisions)		between other marine users and the Petroleum Activity		
Establish a 500m temporary safety exclusion zone (SEZ) around the survey vessel.	F. Yes. CS: Minimal cost. Standard practice.	Presence of the SEZ will reduce the likelihood of interfering with other marine users.	Benefits outweigh cost/sacrifice. Control is also standard practice.	Yes C 1.2
Good practice				
AHO will be notified of activities no less than four weeks prior to the commencement of the first activity, and then subsequently when vessels are undertaking activities within the Operational Area for more than three weeks at a time	F: Yes. CS: Minimal cost. Standard practice.	Notifying AHO will enable the generation of navigation warnings (Maritime Safety Information Notifications and Notices to Mariners (including AUSCOAST warnings where relevant)), thereby reducing the likelihood of interacting with other marine users.	Benefits outweigh cost/sacrifice.	Yes C 1.3
Notify AMSA's Joint Rescue Coordination Centre (JRCC) of activities where vessels will be in the Operational Area >3 weeks, 24–48 hours before activities commence.	F: Yes. CS: Minimal cost. Standard practice.	Communicating the Petroleum Activity to other marine users ensures they are informed and aware should emergency response be required.	Benefits outweigh cost/sacrifice.	Yes C 1.4
Notify relevant government departments, fishing industry representative bodies and licence holders of activities prior to commencement and following completion of activities.	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 interference with other marine users.	Benefits outweigh cost/sacrifice. Control is also standard practice.	Yes C 1.5
Survey vessels will have an Indonesian language communication sheet onboard which will include key activity details (such as the timing and location information) to provide to any Indonesian fishers encountered during the activity.	F: Yes. CS: Minimal cost.	Communicating 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.	Yes C 1.6
Where safe and practicable to do so, Indonesian fishers will	F: Yes. CS: Minimal cost.	Improves the visibility of Indonesian fishing vessels during night-	Benefits outweigh cost/sacrifice.	Yes C 1.7

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Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[26]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
be provided with visibility aids, such as reflectors, lights or equivalent devices, for use during night-time operations.		time operations, reducing the risk of vessel interactions.		
Develop a Concurrent Operations (CONOPS)/ Simultaneous Operations (SIMOPS) Plan to manage interactions with other facilities/vessels, where applicable. The CONOPS/ SIMOPS Plan will contain information on: • minimum separation distances • communications • vessels/activities involved in CONOPS/SIMOPS • exclusion zone entry and exit processes • key roles, responsibilities and emergency contacts.	F: Yes. CS: Minimal cost. Standard practice.	A CONOPS/ SIMOPS Plan informs nearby facilities and vessels of the Petroleum Activity and allows vessel movements to be managed to reduce the likelihood of interactions.	Benefits outweigh cost/sacrifice. Control is also standard practice.	Yes C 1.8
A support vessel to be on standby during survey activities to communicate with third-party vessels.	F: Yes. CS: Additional costs associated with hiring another vessel and increased risk of vessel collision with more vessels in the Operational Area.	Given the legislative controls in place and the duration of the activity, using a support vessel will provide only a small reduction in likelihood of a collision with a third-party vessel.	Grossly disproportionate.	No
Professional judgement – Eliminate				
Do not use survey vessels during shipping, commercial fishing or oil and gas activities.	F: No. Shipping occurs all year and cannot be avoided. Simultaneous operations (SIMOPS) with fishing seasons cannot be eliminated, as exact timings for all activities are not confirmed. CS: Not considered, control not feasible.	Not considered, control not feasible.	Not considered, control not feasible.	No
Professional judgement – Substitute				
No additional controls were identified.				

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Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[26]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
Professional judgement – Engineered Solution				
No additional controls were identified.				
Risk-based analysis				
N/A				
Company values				
N/A				
Societal values				
N/A				
ALARP statement: On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.3.4.2) and Woodside's criteria for demonstrating ALARP (Section 2.4.1), Woodside considers the adopted controls appropriate to manage potential impacts/risks associated potential impacts associated with the physical presence of survey vessels on other users such as commercial fisheries, recreational fishing and shipping. 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, physical presence of the survey vessels may result in a temporary localised impact to commercial fishing, recreational fishing and shipping. Further opportunities to reduce the impacts have been investigated above. The adopted controls are considered good practice/industry best practice and meet the requirements of the *Navigation Act 2012* (Cth) and Australian Marine Orders, and expectations of AMSA and AHO provided in consultation with relevant persons. On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.3.4.2) and Woodside's criteria for demonstrating acceptability (Section 2.4.2), 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, EPSs and MC			
EPOs	***Controls***	***PS***	***MC***
EPO 1 Impacts to relevant marine users from Petroleum Activity will be limited through the provision of appropriate information/notification.	C1.1 Vessels to adhere to the navigation safety requirements and any subsequent Marine Orders: • Marine Order 21 (Safety and emergency arrangements) • Marine Order 27 (Safety of navigation and radio equipment • Marine Order 30 (Prevention of collisions)	PS 1.1 Survey vessels compliant with the *Navigation Act 2012* (Cth), Marine Order 21 (Safety and emergency arrangements), Marine Order 27 (Safety of navigation and radio equipment) and Marine Order 30 (Prevention of collisions).	MC 1.1 Marine Assurance inspection records demonstrate compliance with standard maritime safety procedures (Marine Orders 21, 27 and 30).
	C 1.2	PS 1.2	MC 1.2

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EPOs, EPSs and MC			
EPOs	***Controls***	***PS***	***MC***
	Establish a 500m temporary safety exclusion zone (SEZ) around the survey vessel.	Survey vessels remain outside the established 500 m SEZ, unless authorised to enter for operational purposes.	No unauthorised vessel entries into the 500 m SEZ during the activity.
	C 1.3 AHO will be notified of activities no less than four weeks prior to the commencement of the first activity, and then subsequently when vessels are undertaking activities within the Operational Area for more than three weeks at a time	PS 1.3 Notification to AHO of activities and movements to allow generation of navigation warnings (i.e. Maritime Safety Information Notifications and Notice to Mariners [including AUSCOAST warnings]) where relevant.	MC 1.3 Consultation records demonstrate AHO has been notified within required timeframes, before the activity commences.
	C 1.4 Notify AMSA's Joint Rescue Coordination Centre (JRCC) 24–48 hours before activities commence where operationally practicable,.	PS 1.4 JRCC is notified of the activity 24-48 hours before scheduled activity start date where operationally practicable,.	MC 1.4 Consultation records demonstrate AMSA's JRCC has been notified within required timeframes before the activity starts.
	C 1.5 Notify relevant government departments, fishing industry representative bodies and licence holders of activities prior to commencement and following completion of activities.	PS 1.5 Notification to Australian Fisheries Management Authority (AFMA), Commonwealth Fisheries Association (CFA), Commonwealth Department of Agriculture, Fisheries and Forestry (DAFF) – Fisheries, Western Australian Fishing Industry Council (WAFIC), DPIRD, DMPE, Recfishwest, North West Slope Trawl Fishery licence holders 10 days before activity commences, and following completion of activities.	MC 1.5 Consultation records demonstrate that relevant persons have been notified prior to commencement and following completion of activities.
	C 1.6 Survey vessels will have an Indonesian language communication sheet onboard which will include key activity details (such as the timing and location information) to provide to any Indonesian fishers encountered during the activity.	PS 1.6 Indonesian fishers encountered during the Petroleum Activity are provided with relevant information about the activity in Indonesian to support effective communication and minimise potential interactions.	MC 1.6 Records of interactions with Indonesian fishers are maintained.
	C 1.7 Where safe and practicable to do so, Indonesian fishers will be	PS 1.7 Visibility aids are available onboard survey vessels and provided to Indonesian	MC 1.7 Provision of visibility aids is recorded in the vessel log

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EPOs, EPSs and MC			
EPOs	***Controls***	***PS***	***MC***
	provided with visibility aids, such as reflectors, lights or equivalent devices, for use during night-time operations.	fishers, where safe and practicable to do so, to enhance vessel visibility during night-time operations.	
	C 1.8 Develop a Concurrent Operations (CONOPS)/ Simultaneous Operations (SIMOPS) Plan to manage interactions with other facilities/vessels, where applicable. The CONOPS/ SIMOPS Plan will contain information on: • minimum separation distances • communications • vessels/activities involved in CONOPS/SIMOPS • exclusion zone entry and exit processes • key roles, responsibilities and emergency contacts.	PS 1.8 A CONOPS/ SIMOPS Plan developed for any concurrent activities identified.	MC 1.8 Records demonstrate Woodside engaged with identified proponent before starting the Petroleum Activity and developed a CONOPS/ SIMOPS Plan (if required).

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6.8.2 Physical presence: disturbance to seabed from geotechnical and geophysical surveys

Context		
Survey vessels – Section 3.8 Geotechnical Survey Activities – Section 3.7	Physical Environment – Section 4.4 Habitats and Biological Communities – Section 4.5	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 habitat as a result of geotechnical surveys	X	X		X			A	F	-	-	GP PJ	Broadly Acceptable	EPO 2 EPO 3 EPO 4

Description of Source of Impact

Geotechnical surveys

The geotechnical surveys will be performed using standard industry equipment (Section 3.7) and will consist of in situ testing and the recovery of soil and rock samples by deploying the geotechnical equipment from the survey vessels to the seabed at locations within the Operational Area to ground truth the geophysical data and provide geotechnical data for engineering design.

The geotechnical investigation may involve the following seabed-disturbing activities:

Penetration testing: The Petroleum Activity includes a number of PCPTs across the Operational Area. Each PCPT will create a hole on the seabed between 3 and 55 m below the mudline with a diameter from 80 mm to 250 mm (depending on the type of equipment used). The number of PCPTs that will be carried out during the Petroleum Activity will depend on conditions during the Petroleum Activity and results of PCPT as they occur. However, for the purpose of this EP the impact assessment assumes ~90 PCPTs per year could occur. Once PCPTs are complete all equipment is removed from the seabed and the resulting hole will infill naturally overtime.

Cored boreholes: Cored boreholes of up to 50 m below the mudline with a diameter up to ~225 mm are planned to be taken across the Operational Area. These will either be drilled from the surface on a vessel or drilling/testing equipment involving a remotely operated self-contained drilling unit lowered to the seabed from the vessel. The borehole is advanced by a combination of either core drilling or push sampling (thin or thick-walled tubes) at intervals or PCPT testing (Section 3.7.1), each interval. The remaining hole in the seabed would infill naturally with sediment over time. The number of boreholes made during the Petroleum Activity may change depending on conditions during the Petroleum Activity. For the purpose of this EP, the impact assessment assumes ~50 boreholes per year.

Piston core sampling: Piston gravity core or vibrocore sampling may occur during the Petroleum Activity creating holes with depths of between 1 m to 6 m below the mudline. When the depth of sample refusal is reached, all equipment is withdrawn from the seabed. A small hole will remain in the seabed, ~70–110 mm in diameter, which will infill naturally with sediment over time. The number of piston cores taken during the Petroleum Activity may change depending on conditions during the Petroleum Activity. For the purpose of this EP, the impact assessment assumes 90 piston cores per year.

Box Core sampling: Box core sampling will occur during the Petroleum Activity across all Operational Area. All box core samples will result in a cube of sediment being removed from the seabed. The possible box core sample equipment is capable of recovering is ~0.125 m³ (0.5 m × 0.5 m × 0.5 m). A self-releasing trigger mechanism, initiated once the frame reaches the seabed, allows the box corer to penetrate into the seabed. Penetration is limited by a

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stopper to 0.5 m depth. The number of box cores taken may change depending on conditions during the Petroleum Activity. For the purpose of this EP, the impact assessment assumes ~90 box cores per year will be executed.

Section 3.7 provides further details on the geotechnical equipment associated with the survey and the potential seabed disturbance associated with it.

Drill cuttings

The geotechnical seabed coring may result in the indirect discharge of a small quantity of drill cuttings and fluid at the seafloor. Sampling boreholes drilled to recover soil and rock samples generate minimal drill cuttings as the objective is to recover a continuous sample profile of the depth of the borehole. Any drill cuttings will remain on the seabed immediately adjacent to the borehole site. The cuttings are pieces of material being drilled and likely to be benign calcareous sediment. Some of the discharged cuttings (lighter particles) will be temporarily suspended in the water column (close to seafloor) before settling to the seafloor within the immediate vicinity of the drilling location. The environmental impact associated with the indirect discharge of cuttings from the geotechnical seabed coring activities would be negligible and temporary lasting only minutes after the seabed coring operations are complete. Drilling fluid will consist primarily of seawater, and may have small quantities of additives. These additives are considered to be very low toxicity (as assessed through Woodside's Chemical Selection and Assessment Environment Guideline) and are expected to dilute rapidly upon discharge; as such no toxic effect to biota are expected to occur.

Placement of equipment on the seafloor

Placing the geotechnical equipment on the seafloor will result in minor localised physical disturbance to the seafloor beneath the equipment. These temporary footprints will return to natural state from natural sediment movements.

Discharge of drilling fluids is discussed further in Section 6.8.6.

Impact Assessment

Environmental Value(s) Potentially Impacted

Geotechnical survey activities are likely to result in localised and temporary physical modification and disturbance to a small area of the seabed.

Benthic habitat

The benthic habitat within the Operational Area is predominantly soft sediment with sparsely associated epifauna which is broadly represented throughout the NWS Province and wider NWS (Section 4.5). Benthic habitats of the soft sediment seabed are characterised by burrowing infauna such as polychaetes and worms, with biota such as sessile filter feeders occurring on areas of hard substrate. The infauna communities are likely to be representative of the NWS province which is described as being of low abundance and dominated by polychaetes and crustaceans (RPS 2012).

Subtidal soft sediments support a patchy abundance of various infauna (including polychaete worms, molluscs, and crustaceans) and epifauna (including crabs, sea urchins, snails, sea stars, demersal fish, sponges, sea whips and sea squirts) which are widespread and well represented and in the context of the contiguous extent of habitats across the region. They are considered to be of relatively low environmental sensitivity (Section 4.4).

Impacts from geotechnical survey activities are expected to be confined to sediment burrowing infauna, surface epifauna invertebrates and potentially sessile filter feeders inhabiting the seabed directly around the survey activities (Gates and Jones 2012; Hughes et al. 2010). Placing equipment on the seafloor may relocate small amounts of sediment, with slight and short-term impacts to biota, detailed above, due to elevated turbidity and the clogging of respiratory and feeding parts of filter feeding organisms. However, elevated turbidity would only be expected to be temporary, and is therefore not expected to have a lasting effect on environment receptors.

Key ecological features

Operational Area Part A overlaps the Seringapatam Reef and Commonwealth waters in the Scott Reef Complex. 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). However, geotechnical activities will occur in water depths greater than 350 m and are therefore unlikely to directly interact with the shallow reef habitats that underpin the ecological values of the Scott Reef Complex and Seringapatam Reef.

Operational Area Part B overlaps with the Continental Slope Demersal Fish Communities KEF. Impacts to benthic marine fauna as a result of geotechnical surveying are expected to be highly localised to surface area of the borehole, drill cuttings and the footprint of the geotechnical equipment, which is a relatively small area compared to the regional extent of this KEF, extending from Broome to Ashmore Reef. As such, this habitat is well represented on a regional scale.

Benthic habitat surveys in the region indicate that benthic habitats within the KEF are characterised by sand interspersed with areas of rubble and outcroppings of limestone pavement (AIMS 2014; RPS 2011). Such habitats are widely distributed in the NWS Province. As noted in Section 4.4 of the Master Existing Environment document (Appendix C), the geomorphic feature the KEF is associated with is represented worldwide and represents the

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coastline during a previous glacial period. Therefore, potential impacts to this regional-scale KEF are expected to be short term and localised.

Impacts to benthic marine fauna that may be present on this feature as a result of geotechnical surveying are expected to be highly localised to surface area of the borehole, drill cuttings and the footprint of the geotechnical equipment, which is a relatively small area.

Cultural features and heritage values

Refer to Section 6.11 for an assessment of potential impacts to cultural features and heritage values from the Petroleum Activity. Control measures related to underwater cultural heritage have been captured in the tables below to demonstrate that impacts are reduced to ALARP and are of an acceptable level.

Cumulative impacts

Given the small area of seabed potentially impacted by the survey activities, the cumulative area potentially disturbed is considered negligible in the context of the wider distribution of the habitats present.

Demonstration of ALARP				
Control Considered	***Control Feasibility (F) and Cost/Sacrifice (CS)[27]***	***Benefit in Impact/Risk Reduction***	***Proportionality***	***Control Adopted***
Legislation, Codes and Standards				
Report any potential UCH finds to relevant stakeholders and authorities in accordance with the Unexpected Finds Procedure, Underwater Cultural Heritage Act 2018 and the ATSIHP Act.	F: Yes. CS: Minimal.	Ensures workforce are suitably aware of legal and process requirements for managing cultural features and heritage values.	Benefits outweigh cost/sacrifice.	Yes C 4.4
Good Practice				
Monitor inventory deployed to the field and track removal of equipment during activity to ensure all deployed equipment is retrieved.	F: Yes. CS: Minimal cost. Standard practice.	Removing equipment from seabed reduces duration of impact.	Benefits outweigh costs/sacrifice.	Yes C 3.1
Review of existing survey data by a suitably qualified maritime archaeologist to inform areas for survey activities and/or installation of equipment that may cause seabed disturbance (in areas not previously disturbed) to avoid or where not possible, minimise physical impacts to cultural heritage areas or prospective areas.	F: Yes. CS: Minimal cost. Standard practice.	Reduces the risk of damage or destruction of culturally significant underwater heritage, including Indigenous heritage values.	Benefits outweigh costs/sacrifice	Yes C 4.1

[27] *Qualitative measure*

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Demonstration of ALARP				
Control Considered	***Control Feasibility (F) and Cost/Sacrifice (CS)[27]***	***Benefit in Impact/Risk Reduction***	***Proportionality***	***Control Adopted***
Unexpected finds of potential Underwater Cultural Heritage sites/ features, including Indigenous UCH are managed in accordance with the Unexpected Finds Procedure.	F: Yes. CS: Minimal cost. Standard practice.	Reduces the risk of damage or destruction of culturally significant underwater heritage, including Indigenous heritage values.	Benefits outweigh costs/sacrifice	Yes C 4.2
Relevant personnel and ROV operators will be advised in an induction of the potential to encounter UCH, and of their requirement to follow the Unexpected Finds Procedure (Section 7.2.3)	F: Yes. CS: Minimal cost. Standard practice.	Reduces the risk of damage or destruction of culturally significant underwater heritage, including Indigenous heritage values.	Benefits outweigh costs/sacrifice	Yes C 4.3
Monitor the seabed environment before and after the Petroleum Activity to assess any impacts to the 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 change how the activity is conducted; therefore, no change in consequence would occur.	Based on the nature of the activity (i.e. predictable impacts over a small area) and relatively low sensitivity of the area, application of an environmental monitoring control is considered grossly disproportionate. Monitoring will not reduce the consequence or impacts to the seabed, and the cost associated with the level of monitoring required to accurately assess any impacts greatly outweighs the benefits gained. In addition, the presence of additional vessels incur additional impacts and risks to the marine environment as described in other sections.	No
Do not use geotechnical survey equipment close to or on the seabed.	F: No. The deployment of equipment to the seabed is required to meet the objectives of the surveys. CS: Not assessed, control not feasible.	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)[27]***	***Benefit in Impact/Risk Reduction***	***Proportionality***	***Control Adopted***
Professional Judgement – Eliminate				
No routine anchoring will occur during the Petroleum Activity.	F: Yes. CS: Minimal cost. Survey vessels undertaking these activities typically do not anchor.	By minimising anchoring the potential impacts to seabed is reduced.	Benefit outweighs sacrifice.	Yes C 3.2
No activities to occur at water depths less than 75 m.	F: Yes. CS: Minimal cost.	Reduces the risk of damage or destruction of culturally significant underwater heritage, including Indigenous heritage values.	Benefits outweigh costs/sacrifice.	Yes C 3.3
Professional Judgement – Substitute				
No additional controls were identified.				
Professional Judgement – Engineered Solution				
No additional controls were identified.				
Risk-based analysis				
N/A.				
Company values				
N/A.				
Societal values				
N/A.				
ALARP statement: On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.3.4.2) and Woodside's criteria for demonstrating ALARP (Section 2.4.1), Woodside considered the adopted controls appropriate to manage potential impacts/risks associated with seabed disturbance from geophysical and geotechnical survey activities. 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, disturbance to the seabed represents a potential result in no lasting effect with localised impact not significant to environmental receptors. Section 6.8.2 demonstrates that the Petroleum Activity is not inconsistent with any recovery plan or threat abatement plan for a listed threatened species of ecological community. Regard has also been given to relevant conservation advice and wildlife conservation plans during the assessment of potential impacts. On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.3.4.2) and Woodside's criteria for demonstrating acceptability (Section 2.4.2), 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.

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EPOs, EPSs and MC			
EPOs	***C***	***PS***	***MC***
EPO 3 Seabed disturbance to be limited to planned activities and impacts described as part of the Petroleum Activity and will not occur outside the Operational Area.	C 3.1 Monitor inventory deployed to the field and track removal of equipment during activity to ensure all deployed equipment is retrieved.	PS 3.1 Location of equipment deployed to seabed will be tracked and removed from the seabed.	MC 3.1 Field reports for activities that include equipment deployed to seabed will specify the deployment location and confirm removal of the equipment.
	C 3.2 No routine anchoring will occur during the Petroleum Activity.	PS 3.2 No routine anchoring in the Operational Area.	MC 3.2 Scope of work specifically states that routine anchoring is not allowed in the Operational Area (apart from emergency situations). Vessel bridge daily records show no routine anchoring occurred in the Operational Area.
	C 3.3 No activities to occur at water depths less than 75 m.	PS 3.3 No activities to occur outside of Operational Area.	MC 3.3 Vessel bridge daily records show no activities occurred outside the Operational Area.
EPO 4 No adverse impact to Underwater Cultural Heritage without a permit.	C 4.1 Review of existing survey data by a suitably qualified maritime archaeologist to inform areas for survey activities and/or installation of equipment that may cause seabed disturbance (in areas not previously disturbed) to avoid or where not possible, minimise physical impacts to cultural heritage areas or prospective areas.	PS 4.1 Existing survey data reviewed by a suitably qualified maritime archaeologist to inform areas for seabed disturbance activities.	MC 4.1 Records demonstrate review of existing survey data completed prior to commencement of seabed disturbance activities.
	C 4.2 Unexpected finds of potential UCH sites/features, including Indigenous UCH are managed in accordance with the Unexpected Finds Procedure.	PS 4.2 In the event that an underwater cultural heritage site or feature is identified implement the Unexpected Finds Procedure.	MC 4.2 No non-compliance with the Unexpected Finds Procedure.
	C 4.3 Relevant personnel and ROV operators will be advised in an induction of the potential to encounter UCH, and of their requirement to implement the Unexpected Finds Procedure (Section 7.2.3)	PS 4.3 Relevant personnel (including ROV operators) understand their requirements to implement the Unexpected Finds Procedure (Section 7.2.3) through an induction.	MC 4.3 Records demonstrate relevant personnel have undertaken UCH awareness training and are advised of their requirements to implement the Unexpected Finds Procedure (Section 7.2.3).
	C 4.4 Report any potential UCH finds to relevant stakeholders and authorities in accordance	PS 4.4 Report any finds of potential UCH in accordance with the Unexpected Finds	MC 4.4 Records demonstrate confirmed UCH finds have been reported to relevant

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EPOs, EPSs and MC			
EPOs	***C***	***PS***	***MC***
	with the Unexpected Finds Procedure, Underwater Cultural Heritage Act 2018 and the ATSIHP Act	Procedure, including to: Australasian Underwater Cultural Heritage Database via DCCEEW.	authorities and stakeholders.

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6.8.3 Routine acoustic emissions: Generation of noise from survey vessels and geophysical and geotechnical survey equipment

Context		
Survey vessels – Section 3.8 Geophysical Survey Activities – Section 3.6 Geotechnical Survey Activities – Section 3.7	Habitats and Biological Communities – Section 4.5 Protected Species – Section 4.6	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	Socioeconomic	Decision type	Impact	Likelihood	Risk rating	ALARP tools	Acceptability	Outcome
Generation of noise from survey vessels					X		A	E	-	-	GP PJ	Broadly Acceptable	EPO 2 EPO 5 EPO 6
Generation of noise from geophysical and geotechnical survey equipment.				X	X		A	E	-	-	GP PJ	Broadly Acceptable	EPO 2 EPO 5 EPO 6

Description of source of impact

Survey vessels will generate continuous non-impulsive noise emitted from engines and thrusters during transit and when using DP, whilst geophysical and geotechnical survey operations will generate both continuous and intermittent non-impulsive and impulsive sound depending on the type of equipment used.

Vessels and operation of dynamic positioning systems

Vessels

Vessels used for the Petroleum Activity are detailed in Section 3.8. The sound levels and frequencies generated by vessels varies with the size of the vessel, speed, engine type and the activity being undertaken. Vessels produce low frequency sound (i.e. below 1 kHz) from the operation of machinery, hydrodynamic flow sound around the hull and from propeller cavitation, which is typically the dominant source of sound (Ross, 1987, 1993). These noise sources 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).

Geotechnical drilling vessels are likely to hold station in the Operational Area using DP and multipurpose survey vessels and USVs may also require the use of DP although this is uncommon and if required would likely only be for short durations.

McCauley (1998) measured underwater broadband noise equivalent to about 182 dB re 1 µPa at 1 m (rms SPL) from a support vessel holding station using DP in the Timor Sea; it is expected that similar noise levels will be generated by vessels used for this activity.

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Table 6-2 provides indicative source levels for the vessels likely to be operating in the Operational Area. A final vessel selection had not been made; therefor the vessels were selected with parameters considered conservatively representative of a typical vessel that would conduct such works.

Table 6-2 Survey vessel source levels

Vessel	Source level (dB re 1 μPa^2m^2)
Multipurpose survey vessel or USV under transit (e.g. *Skandi Feistein*)	172.6 dB re 1 μPa^2m^2
Multipurpose survey vessel or USV under DP (e.g. *Fugro Etive*)	181.3 dB re 1 μPa^2m^2
Geotechnical drilling vessel under DP (e.g. *Deep Orient*)	185 dB re 1 μPa^2m^2
OSV under DP undertaking resupply of survey vessel (e.g. *Fugro Etive*)	181.3 dB re 1 μPa^2m^2

Geophysical survey activities

Geophysical surveys can generate both impulsive and non-impulsive sounds. Geophysical surveys are used for bathymetric mapping and shallow sub-bottom profiling, penetrating to depths of about 60 m below the seabed. Geophysical surveys use a variety of profilers which operate at differing energy levels and are characterised by different dominant frequencies. Higher energy sources are needed to transmit the acoustic signals to greater depth, but they have correspondingly lower dominant frequencies which reduce the resolution of the resultant record. The type of profiler used depends on the nature of the substrate, penetration and resolution required. The geophysical surveys will use a range of survey techniques detailed in Table 3-3 which are considered non-impulsive sound sources e.g. some types of sub-bottom profilers, MBES, side scan sonars, and impulsive sound sources e.g. the boomer sub-bottom profiler. It is known that impulsive sounds change to non-impulsive as these sounds propagate through the water however, Martin et al. (2020) suggests that this is not relevant for assessing hearing injury because sounds retain impulsive character when SPLs are above the recommended threshold levels.

Most commercial SBPs are small, low-powered, high-resolution and shallow-penetrating systems, producing electrical pulses across a range of frequencies (Salgado Kent et al. 2016; Jiménez-Arranz et al. 2017). The SBP instruments proposed for the survey produce pulses of sound between ~50 Hz and 30 kHz with source levels between ~192 and 220 dB re 1 µPa (SPL) at 1 m.

MBES and SSS are VHF 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). 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 (Zykov 2013). Indicative source levels produced for MBES range from 210 – 247 dB re 1µPa@1m and for SSS range from 208 – 231 dB re 1µPa@1m (Jiménez-Arranz, et al. 2020). Despite relatively high source levels, the high operating frequencies of most MBES and SSS places the dominant sound frequencies above the principal auditory range of most very low frequency (VLF) and low frequency (LF) hearing cetaceans. However, high-frequency (HF) hearing cetaceans are likely to occur in the Operational Area (e.g. dolphins) that have the capability to hear some of the sound energy (NMFS 2024; Accomando et al. 2025).

A USBL system may also be used during the survey for the purpose of accurate underwater positioning. USBL systems work by emitting short pulses of medium to high frequency sound (19–34 kHz) in short 'chirps'. Source levels are in the order of 184–202 dB re 1 µPa (SPL) at 1 m. The operating frequency range is above the auditory range of VLF and LF hearing cetaceans e.g. Pygmy blue whales and Humpback whales (0.168 – 26.2 and 0.376 - 56 kHz respectively; Accomando et al, 2025), marine turtles and the majority of fish species (<1 kHz; Ladich 2000; Popper et al. 2014). Similar to MBES and SSS, dolphins have the capability to hear the sound produced from USBL.

Geotechnical survey activities

The key sound sources during geotechnical surveys include the penetration tests and sampling boreholes undertaken at the seabed. Sound levels associated with standard penetration testing and small-core drilling have been measured in waters off WA (Erbe and McPherson 2017). The broadband (20 Hz to 24 kHz) source levels for penetration testing were 151–160 dB re 1 uPa^2s sound exposure level (SEL) at 1 m (equivalent to ~160–170 dB re 1 µPa SPL at 1 m), with received levels reducing to ~141–146 dB re 1 µPa SPL within 20 m distance from the source (Erbe and McPherson 2017). The broadband (30 Hz to 2 kHz) drilling source levels were 142–145 dB re 1 µPa SPL at 1 m (Erbe and McPherson 2017).

Underwater sound produced by the geotechnical survey equipment has the potential to affect marine fauna that may pass within close proximity to survey operations. The potential effects to habitats and ecosystems (i.e. benthic invertebrate communities, planktonic communities, KEFs), as well as indirect effects to commercial fisheries associated with the potential disturbance to fishes is also considered.

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Species sensitivity and impact thresholds

Marine mammals

Marine mammals, especially cetaceans, rely on sound for important life functions including individual recognition, socialising, detecting predators and prey, navigation and reproduction (Weilgart 2007; Erbe et al. 2015; Erbe et al. 2018). Underwater noise can affect marine mammals in various ways including interfering with communication (masking), behavioural changes, a shift in the hearing threshold (PTS and TTS), physical damage and stress (National Research Council [NRC] 2003; Erbe 2012; Rolland et al. 2012).

For continuous noise sources thresholds for potential hearing impairment, in terms of TTS or PTS are presented as cumulative sound exposure levels integrated over a 24-hour period (SEL_{24h}) and are frequency weighted according to the auditory weighting categories of different cetacean hearing groups (NMFS 2024, Accomando et al. 2025).

For impulsive sound sources, thresholds for potential hearing impairment are presented as dual metric criteria, comprising the peak pressure (PK) from a single impulse or the SEL accumulated from multiple impulses over a period of 24 hours (SEL_{24h}). The SEL_{24h} thresholds are frequency weighted according to the auditory weighting categories of different types of cetaceans, including VLF cetaceans e.g. pygmy blue whales and LF cetaceans e.g. humpback whales, and HF cetaceans (sperm whales, beaked whales and most dolphins) (Accomando et al.2025). The PK thresholds for a single impulse are not frequency weighted.

A range of behavioural changes can occur in marine fauna in response to sound pressure levels. Onset of behavioural disturbance to cetaceans has been reported to occur in response to sound levels ranging from 120 to >180 dB re 1 µPa SPL (Southall et al. 2007). This may include minor responses, such as a momentary pause in vocalisation or reorientation of an animal to the source of the sound, or stronger avoidance responses (Southall et al. 2007). The US NMFS proposes a threshold of 160 dB re 1 µPa SPL for a potentially significant behavioural response to impulsive sound sources (NMFS 2024). The marine mammal behavioural threshold based on the current US NMFS (2024) criterion for marine mammals of 120 dB re 1 µPa (SPL; L_p) for non-impulsive sound sources is used in this impact assessment.

Table 6-3: Impact thresholds for low and high frequency cetaceans for impulsive and continuous noise

Hearing group	Impulsive			Continuous		
	PTS onset thresholds: SEL_{24h} (dB re 1 µPa².s)	***TTS onset thresholds: SEL_{24h} (dB re 1 µPa².s)***	***Behavioural response (dB re 1 µPa)***	***PTS onset thresholds: SEL_{24h} (dB re 1 µPa².s)***	***TTS onset thresholds: SEL_{24h} (dB re 1 µPa².s)***	***Behavioural response (dB re 1 µPa)***
VLF cetaceans	183	168	160	197	177	120
LF cetaceans	183	168		197	177	
HF cetaceans	193	178		201	181	

Source: NMFS (2024); Accomando et al. 2025; Southall et al. (2019); NOAA (2019).

Marine Reptiles

There is a paucity of data regarding responses of marine turtles to underwater noise. However, 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). Lenhardt (1994) observed marine turtles avoiding LF sound, while McCauley et al. (2000) noted increased swimming activity at received levels of 166 dB re 1 µPa.

McCauley et al. (2000) observed the behavioural response of caged green and loggerhead turtles to an approaching seismic airgun. For received levels above 166 dB re 1 µPa SPL, turtles increased their swimming activity and, above 175 dB re 1 µPa SPL, began to behave erratically, which was interpreted as an agitated state. The 166 dB re 1 µPa SPL threshold has subsequently been adopted by the US NMFS as a behavioural disturbance threshold for marine turtles (NMFS 2011) for impulsive sources and is applied in this assessment.

Historically, few quantitative thresholds have been available for assessing impacts of underwater noise on marine turtles. Popper et al. (2014) assessed thresholds for marine turtles and found qualitative results that TTS was only moderate for near field exposure, and low for both intermediate and far field exposure. The same review found that the risk of behavioural disturbance was high for near-field exposure, moderate for intermediate exposure and low for far-field exposure. No numerical thresholds have been developed for behavioural impacts of continuous noise sources (e.g. vessel noise) on marine turtles.

Updates to the recommended underwater noise effect criteria – temporary threshold shift (TTS), permanent threshold shifts (PTS), and auditory injury (AINJ) thresholds were published by Accomando et al. (2025)[28], and adopted by

[28] *The weighted non-impulsive thresholds by themselves only indicate the TTS/ AINJ threshold at the most susceptible frequency.*

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NMFS (2025)[29]. This updated criteria provide lower onset thresholds for AINJ and TTS than previously available thresholds and are considered appropriate for assessing impacts from continuous vessel noise associated with the Petroleum Activity however, the behavioural effect threshold for marine turtles remains unchanged. For impulsive sound sources, thresholds for PTS, TTS and auditory injury have been developed by Accomando et al. (2025) and are presented in Table 6-7.

The Recovery Plan for Marine Turtles (CoA 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). However, given the thresholds outlined in Table 6-7, it is reasonable to expect that marine turtles may demonstrate avoidance or attraction behaviour to the noise generated by the activity.

Table 6-4: Impact thresholds for marine turtles for impulsive and continuous noise

Hearing group	Impulsive			Continuous		
	PTS onset thresholds: ***SEL24h (dB re 1 µPa².s)***	***TTS onset thresholds:*** ***SEL24h (dB re 1 µPa².s)***	***Behavioural response*** *(dB re 1 µPa)*	***PTS onset thresholds:*** ***SEL24h (dB re 1 µPa².s)***	***TTS onset thresholds:*** *SEL24h (dB re 1 µPa².s)*	***Behavioural response*** *(dB re 1 µPa)*
Marine turtles	184^	169^	166* 175+	198^	178^	(N) High (I) Moderate (F) Low#

*Source: ^ PTS and TTS thresholds (Accomando et al. 2025); * behavioural response threshold (impulsive) (National Science Foundation, 2011), + behavioural disturbance threshold (impulsive) (McCauley et al., 2000); # behavioural response threshold (continuous) (Popper et al., 2014)*

Note: relative risk (high, medium and low) is given for marine turtles at three distances from the source defined in relative terms as near (N – tens of metres), intermediate (I – hundreds of metres) and far (F – thousands of metres) (after Popper et al., 2014).

Fish (including sharks and rays)

Fish perceive sound through the ears and the lateral line, which are sensitive to vibration. Some species of teleost or bony fish (e.g. herring) have a structure linking the gas-filled swim bladder and ear, and these species usually have increased hearing sensitivity. These species are considered to be more sensitive to anthropogenic underwater noise sources than species such as cod (*Gadus* sp.), which do not possess a structure linking the swim bladder and inner ear. Fish species that either do not have a swim bladder (e.g. elasmobranchs (sharks and rays) and scombrid fish (mackerel and tunas)) or have a much-reduced swim bladder (e.g. flat fish) tend to have a relatively low auditory sensitivity.

Fishes are primarily sensitive to the particle motion component of sound at close range to a sound source, while the presence of a swim bladder results in a varying degree of sensitivity to sound pressure (Popper and Hawkins 2018; Popper et al. 2019). Consequently, fishes are broadly categorised into three groups with respect to their hearing capabilities (Popper et al. 2014):

- Fishes with no swim bladder or other gas chamber (e.g. sharks, mackerels) – Sensitive only to particle motion, not sound pressure changes.
- Fishes with swim bladders, but without a direct connection between the swim bladder and the inner ear (e.g. demersal snappers and emperors) – Hearing primarily involves particle motion with some limited ability to indirectly detect changes in sound pressure.
- Fishes with a swim bladder or other gas volume connected directly to the inner ear (e.g. herrings, sardines, pilchards, shads) – These fishes are able to detect both sound pressure as well as particle motion, and are susceptible to barotrauma.

Considering these differences in fish physiology, Popper et al. (2014) developed sound exposure guidelines for fish, sharks and rays. These guidelines include relative risk criteria (high, moderate and low) for behavioural effects, masking, TTS and injury at three distance categories: near (N) (tens of metres from the source), intermediate (I) (hundreds of metres from the source) and far (F) (thousands of metres from the source).

The thresholds presented in Table 6-5 are considered appropriate for assessing the potential impacts of continuous vessel noise and impulsive geophysical and geotechnical sound sources to fish from the Petroleum Activity.

It should be noted that the impulsive sound criteria proposed by Popper et al. (2014) are largely based on studies of exploration seismic surveys and are therefore considered highly conservative when applied to the comparatively low-energy geophysical survey equipment proposed for this activity.

[29] *AINJ was previously referred to as PTS. The new terminology acknowledges that auditory injury may occur without PTS.*

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Cartilaginous fish (such as sharks and rays) lack a swim bladder and are considered less sensitive to sound than bony fish. The hearing capabilities of whale sharks have not been studied in detail, although they are considered most likely to respond to low-frequency sounds (Myrberg 2001).

Table 6-5 Impact thresholds for fish, sharks and rays for impulsive and continuous noise

Hearing group	Impulsive			Continuous		
	PTS onset thresholds: SEL_{24h} ***(dB re 1 µPa².s)***	***TTS onset thresholds:*** SEL_{24h} ***(dB re 1 µPa².s)***	***Behavioural response (dB re 1 µPa)***	***PTS onset thresholds:*** SEL_{24h} ***(dB re 1 µPa².s)***	***TTS onset thresholds:*** SEL_{24h} ***(dB re 1 µPa².s)***	***Behavioural response*** ***(dB re 1 µPa)***
Fish: no swim bladder	216	186	(N) High (I) Moderate (F) Low	(N) Low (I) Low (F) Low	(N) Moderate (I) Low (F) Low	(N) Moderate (I) Moderate (F) Low
Fish: swim bladder not involved in hearing	203	186	(N) High (I) Moderate (F) Low	(N) Low (I) Low (F) Low	(N) Moderate (I) Low (F) Low	(N) Moderate (I) Moderate (F) Low
Fish: swim bladder involving hearing	203	186	(N) High (I) High (F) Moderate	170 dB rms SPL for 48-hours	158 dB rms SPL for 12-hours	(N) High (I) Moderate (F) Low

Impulsive noise: All criteria are presented as sound pressure, even for fish without swim bladders, since no data for particle motion exist.

Continuous noise: rms SPL: root mean square of time-series pressure level, useful for quantifying continuous noise sources.

Relative risk (high, moderate, or low) is given for animals at three distances from the source defined in relative terms as near (N), intermediate (I) and far (F). The sound units provided in the table above for continuous noise include: relative risk (high, medium and low) is given for marine turtles at three distances from the source defined in relative terms as near (N – tens of metres), intermediate (I – hundreds of metres) and far (F – thousands of metres) (after Popper et al., 2014).

Vessel Noise Modelling

Woodside commissioned JASCO Applied Sciences (JASCO) to undertake a modelling study of underwater sound levels associated with the vessels involved in GTGP surveys planned as part of the proposed Browse to NWS Project.

Vessel activities were modelled in close proximity to the Operational Area Part A in Torosa field ~5 km from Scott Reef, and at the nearby Brecknock field within Operational Area Part B (~50km south of Scott Reef) as shown in Figure 6-1.

A range of vessels and operational circumstances may form part of the works, including separate geotechnical and geophysical survey vessels, which may be uncrewed. A supply vessel may be required to be utilised to deliver equipment and supplies.

Based on the range of vessel activities and locations proposed, four sound-producing scenarios were considered in the study as shown in Table 6-6.

From the underwater acoustic modelling study (Liu et al. 2026), four of the modelled scenarios are discussed in the impact assessment below that demonstrate the worst-case scenarios for underwater noise emitted from a multipurpose survey vessel or USV under transit (scenario A; Figure 6-2), geotechnical drilling vessel under DP (scenario B, Figure 6-3), offshore supply vessel (OSV) resupply of geotechnical drilling vessel under DP (scenario C; Figure 6-4), and a multipurpose survey vessel or USV using DP (scenario D; Figure 6-5).

Whilst Scenarios A, B and C were not modelled at the Torosa site in addition to Brecknock, they are considered conservative scenarios for Operational Area Part A as Brecknock is deeper at 637 m with Torosa site being 396 m depth. Modelling in deeper waters typically shows a wider area that may be ensonified than in shallower waters due to reduced sound absorption by the seafloor substrate. In shallow-water or relatively depth-limited environments, sound propagation is more strongly influenced by interaction with the sea surface and seabed, including reflection, scattering and energy loss to the seabed, whereas deeper-water settings can allow propagation through a larger water column with reduced boundary interaction, depending on the frequency, sound-speed profile and local environmental conditions (Jensen et al., 2011; DOSITS, 2024).

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Table 6-6 Description of modelled scenarios applicable to this EP

Scenario	Location	Water Depth	Scenario description
A	Brecknock (Site 2)	637 m	Multipurpose survey vessel or USV at Brecknock for 24 hours (vessel transit and not DP)
B	Brecknock (Site 2)	637 m	Geotechnical drilling vessel under DP for 24 hours, at Brecknock
C	Brecknock (Site 2)	637 m	Offshore supply vessel (OSV) resupply of Geotechnical drilling vessel under DP for 8 hours, at Brecknock
D	Torosa (Site 1)	396 m	Multipurpose survey vessel under DP or USV under DP for 12 hours of operation at Torosa

The purpose of the modelling is to assist in understanding the potential acoustic impact on marine fauna including marine mammals, marine turtles, and fish. The study specifically assessed distances from operations where underwater sound levels reached thresholds corresponding to criteria including behavioural response, impairment (temporary threshold shift (TTS) and permanent threshold shift (PTS). PTS is defined as the permanent, irreversible increase in the threshold of audibility at a specified frequency. Whereas auditory injury (AUD INJ) is defined as damage to the inner ear that can result in destruction of tissue, such as loss of auditory neuropathy. The key distinction is that AUD INJ can still occur which may or may not result in PTS (NMFS 2024). The modelling study (JASCO 2026) combines the terms PTS/AINJ however acknowledge that intense noise exposures can cause auditory injury (represented by AINJ; Accomando et al. 2025) without PTS occurring.

The modelling methodology considered scenario-specific source levels and range-dependent environmental properties. Estimated underwater acoustic levels are presented as sound pressure levels (SPL, L_p), and as accumulated sound exposure levels (SEL, L_E) as relevant to the corresponding noise effect criteria. The assessment period for SEL accumulation is defined as a 24-hour period over which sound energy may be integrated. The level is specified with the abbreviation SEL_{24h}.

SEL24h is a cumulative sound exposure metric that integrates received acoustic energy over a 24 hr period. The corresponding SEL24h modelled ranges are generally based on conservative exposure assumptions and therefore often represent a worst-case assessment scenario. In practice, marine mammals, fish and marine turtles are unlikely to remain at a fixed distance from a sound source for extended periods, and exposure levels will vary as animals and sound sources move. Consequently, the ranges associated with an SEL24h threshold does not indicate that all animals occurring within that distance will experience injury or auditory impairment. Rather, it defines the area within which an animal could accumulate a sound exposure equal to the relevant threshold under the modelled exposure assumptions if present for a sufficient duration.

Two distances relative to the source are reported for each sound level:

- R_{max} – the maximum range to the given sound level over all azimuths
- $R_{95\%}$ – the range to the given sound level after the 5% farthest points were excluded.

For this impact assessment the R_{max} values have been considered, providing a further level of conservatism to the assessment.

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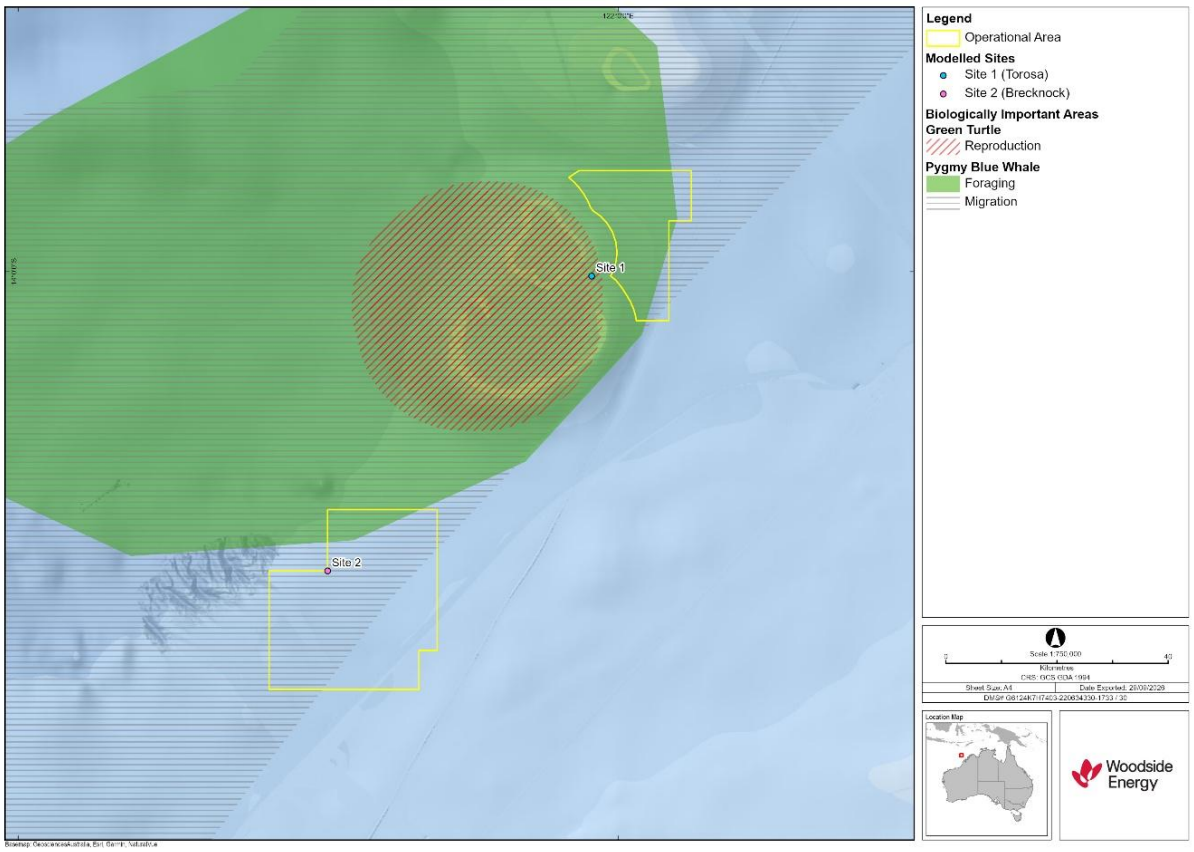


Figure 6-1 Overview map of the modelled sites

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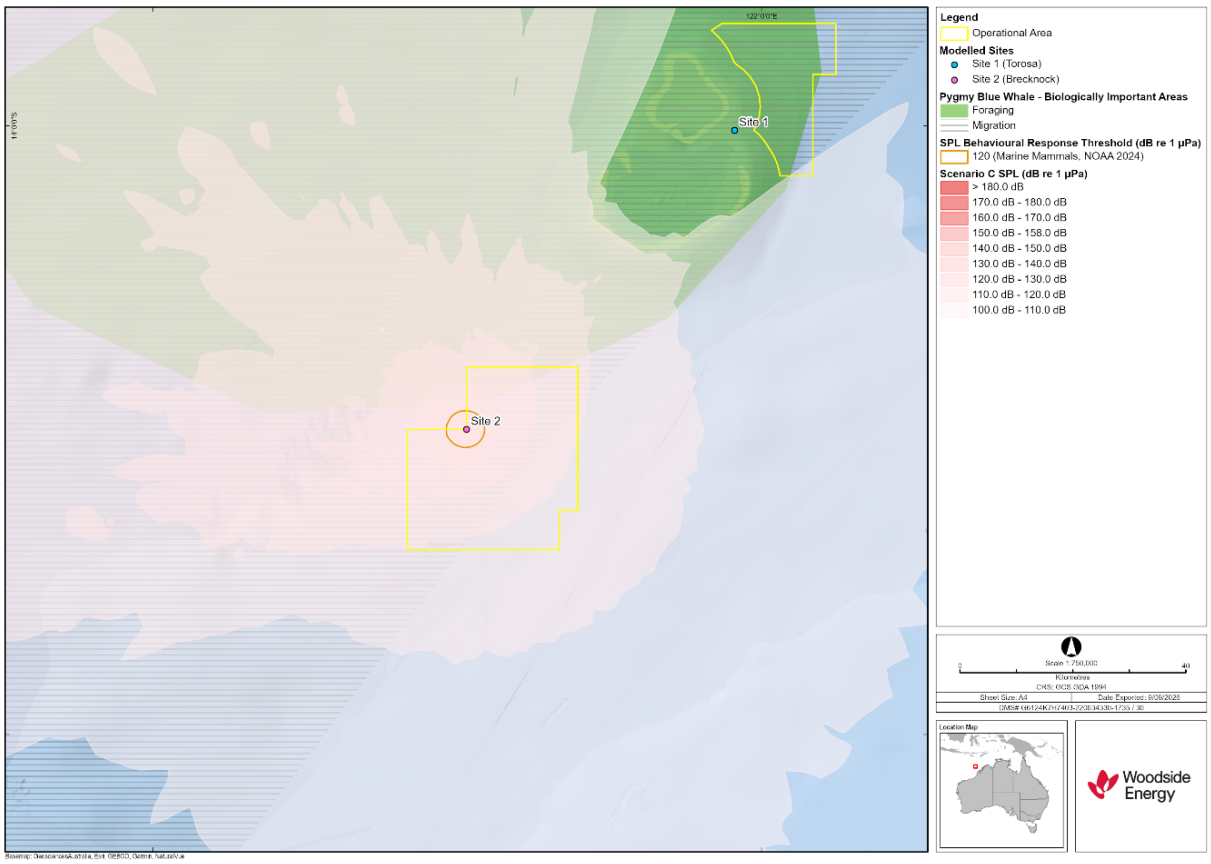


Figure 6-2 Scenario A, Multipurpose survey vessel or USV at Brecknock, SPL: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals

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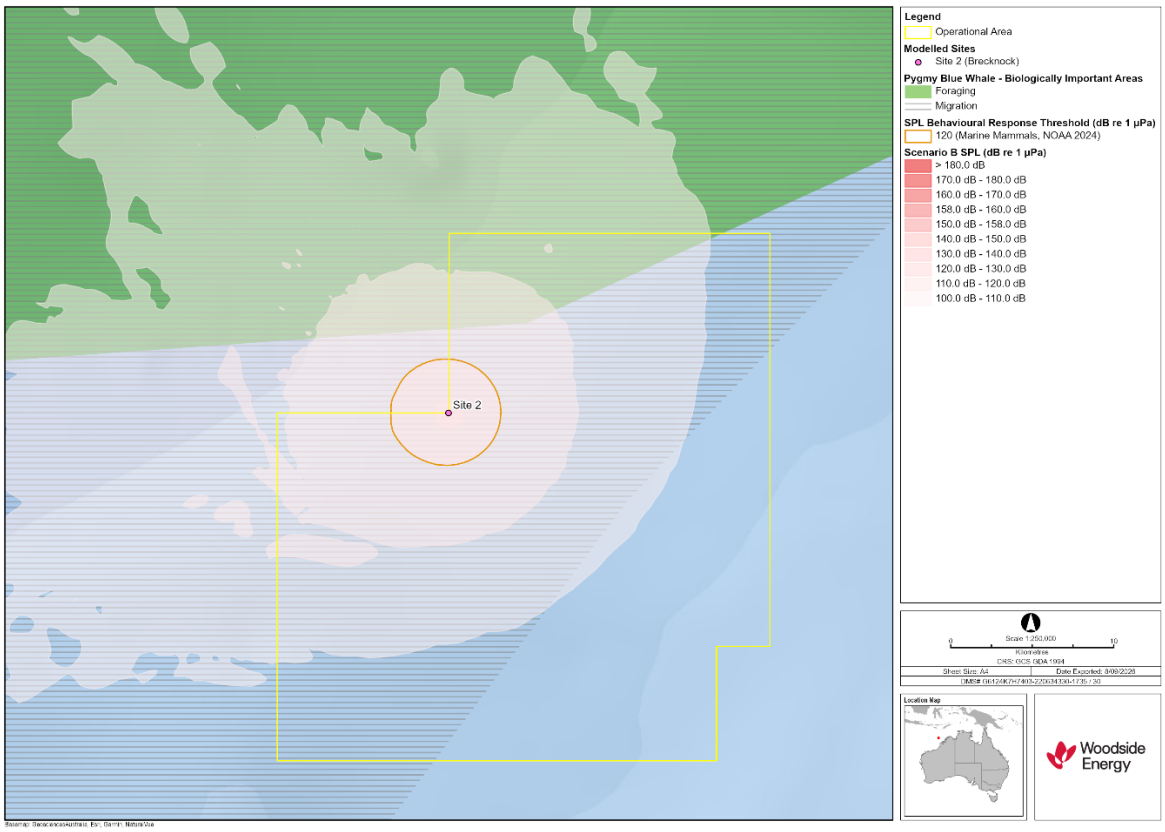


Figure 6-3 Scenario B, Geotechnical drilling vessel under DP at Brecknock, SPL: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

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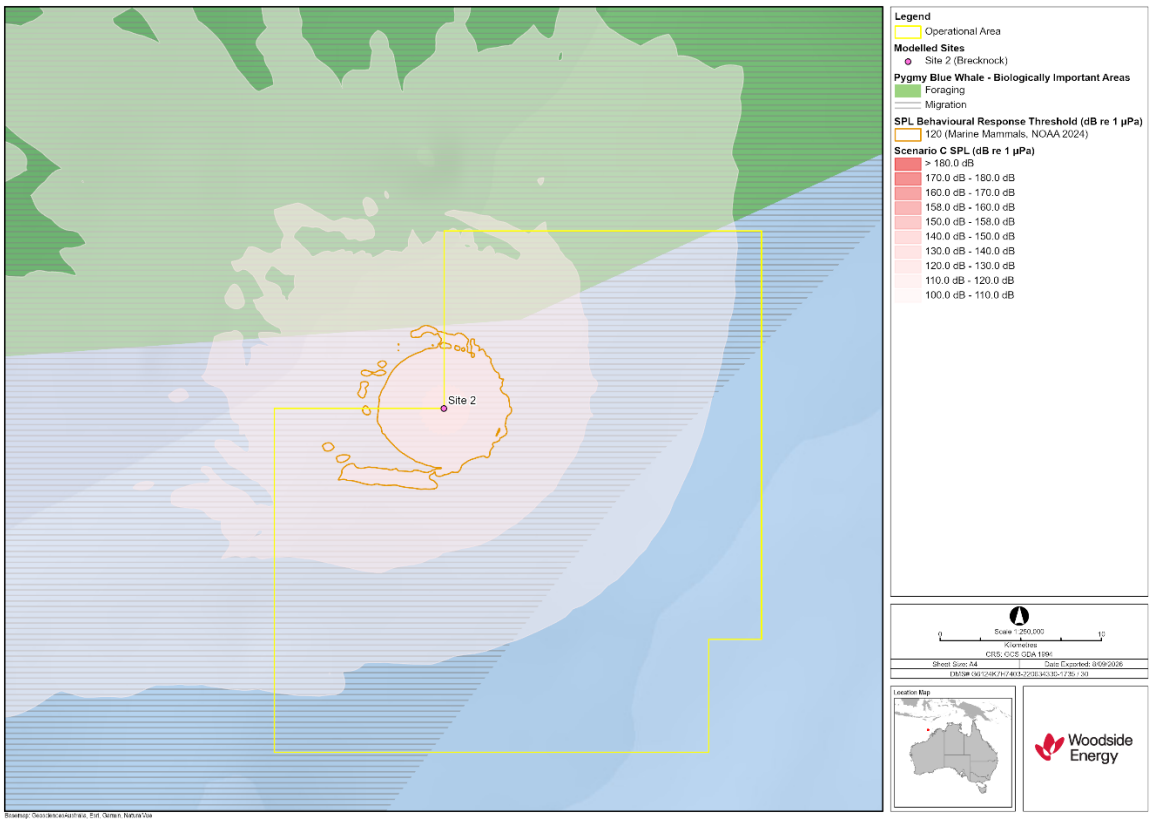


Figure 6-4 Scenario C, Geotechnical drilling vessel under DP at Brecknock with OSV alongside under DP. *SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

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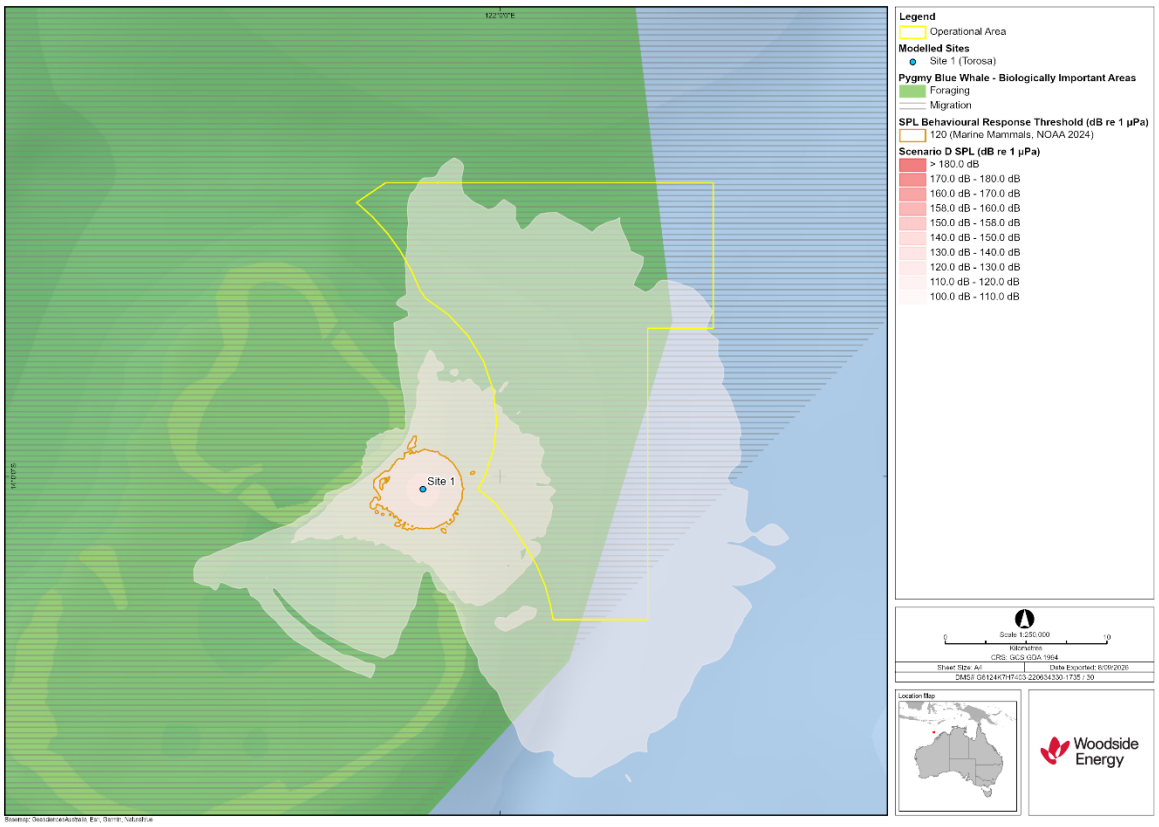


Figure 6-5 Scenario D, Multipurpose survey vessel under DP or USV under DP, at Torosa, SPL: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

The following thresholds and guidelines for this study were chosen because they represent the best available science:

- Frequency-weighted accumulated sound exposure levels (SEL; $L_{E,24h}$) from Accomando et al. (2025) for the onset of TTS and PTS in marine mammals for non-impulsive sound sources. As discussed within Accomando et al (2025), intense noise exposures can cause auditory injury (represented by AINJ) without PTS occurring. In this report, the terms PTS and auditory injury are used however, it is acknowledged that auditory injury may occur without PTS.
- Marine mammal behavioural threshold based on the current US National Oceanic and Atmospheric Administration (NOAA) (NMFS 2024) criterion for marine mammals of 120 dB re 1 µPa (SPL; Lp) for non-impulsive sound sources.
- Sound exposure guidelines for fish, fish eggs, and larvae (Popper et al. 2014, NMFS 2024).
- Frequency-weighted accumulated sound exposure levels (SEL; $L_{E,24h}$) from Accomando et al. (2025) for the onset of TTS and PTS/AINJ in sea turtles.

Table 6-7 presents the maximum (R_{max}) horizontal distances to specific sound pressure levels (SPL) shown in the first column. Table 6-8 presents the maximum (R_{max}) distances to frequency-weighted SEL_{24h} PTS/AINJ and TTS thresholds for marine mammals and sea turtles based on guidelines adopted by Accomando et al. (2025) and NMFS (2024 and 2025).

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Table 6-7 SPL: Maximum (R_{max}) horizontal distances (in km) to sound pressure level (SPL) from most appropriate location for considered sources per scenario.

SPL (L_p; dB re 1 µPa)	Scenario A: Multipurpose survey vessel or USV at Brecknock	Scenario B: Geotechnical drilling vessel under DP, at Brecknock	Scenario C: OSV resupply of Geotechnical drilling vessel, at Brecknock	Scenario D: Multipurpose survey vessel or USV under DP, at Torosa
	R_{max} (km)	R_{max} (km)	R_{max} (km)	R_{max} (km)
180	-	–	–	-
170[1]	-	0.02	0.03	0.02
160	-	0.03	0.06	0.03
158[2]	-	0.04	0.08	0.03
150	-	0.09	0.14	0.06
140	0.02	0.28	0.38	0.17
130	0.06	0.91	1.64	0.54
120[3]	0.21	3.61	7.93	3.14
110	0.81	17.3	19.9	10.04

- *indicates the level was not reached within the limits of the modelled resolution (20 m).*

[1] *48-h threshold for recoverable injury for fish with a swim bladder involved in hearing (Popper et al. 2014).*

[2] *12-h threshold for TTS for fish with a swim bladder involved in hearing (Popper et al. 2014).*

[3] *Threshold for marine mammal behavioural response to non-impulsive noise (NOAA 2024).*

Table 6-8 *SEL_{24h}:* Maximum (R_{max}) horizontal distances (in km) to frequency-weighted SEL_{24h} PTS/AINJ and TTS thresholds for non-impulsive sound sources for marine mammals and sea turtles Accomando et al. (2025) for the modelled scenarios.

Hearing Group	Frequency-weighted SEL_{24h} threshold ($L_{e,24h}$; dB re 1 µPa²•s)	Scenario A: Multipurpose survey vessel or USV at Brecknock	Scenario B: Geotechnical drilling vessel under DP, at Brecknock	Scenario C: OSV resupply of Geotechnical drilling vessel, at Brecknock	Scenario D: Multipurpose survey vessel under DP or USV under DP, at Torosa
		R_{max} (km)	R_{max} (km)	R_{max} (km)	R_{max} (km)
PTS/ AINJ					
VLF cetaceans	197	/	0.10	0.12	0.09
LF cetaceans	197	/	0.07	0.09	0.08
HF cetaceans	201	–	0.02	0.03	0.02
Marine turtles	198	–	0.09	0.11	0.09
TTS					
VLF cetaceans	177	0.06	0.98	1.12	0.67
LF cetaceans	177	0.06	0.68	0.80	0.48
HF cetaceans	181	–	0.14	0.17	0.13
Marine turtles	178	0.03	0.95	1.02	0.51

- *indicates the level was not reached within the limits of the modelled resolution (20 m).*

/ indicates that the area is less than an area associated with the modelled resolution (0.0013 km2).

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Impact Assessment

Environmental Value(s) Potentially Impacted

Potential impact of noise

Survey vessels and offshore support vessels will generate continuous non-impulsive noise emitted from engines, thrusters etc during transit and when using DP, whilst geophysical and geotechnical survey operations will generate both continuous and intermittent non-impulsive and (depending on the type of equipment used) impulsive sound e.g. the boomer sub-bottom profiler

Elevated underwater noise has the potential to affect marine fauna, including cetaceans, fish, 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 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.

Receptors

The Operational Area are located in water depths between 350 and 900 m. The fauna associated with these areas are predominantly pelagic species of fish, with migratory species such as turtles, whale sharks and cetaceans potentially present in the area seasonally (Section 4.6). Noise interference is a key threat to a number of migratory and threatened cetaceans and marine turtles identified as potentially occurring within the Operational Area. Relevant actions included in recovery plans for these species are outlined in Section 6.10.

There is a pygmy blue whale migration and possible foraging BIA present within the Operational Area. Pygmy blue whales transit the areas during April to August and October to January during their seasonal migrations.

Turtles may occur in Operational Area Part A since the green turtle habitat critical (nesting) zone is in close proximity. The nearest shoreline (and potential nesting beaches) is ~23 km from the Operational Area. Given the water depths are deep and the distance from shore, the Operational Area does not represent suitable foraging or reproduction habitat. Turtles may exhibit behavioural responses when exposed to underwater noise, such as diving. Such disturbances are expected to be localised. Disturbance to individual mating or internesting behaviours may occur, but given the temporary nature of the disturbance, is unlikely to affect individual breeding success or impact marine turtles at the population level.

The Continental Slope Demersal Fish communities KEF and the Seringapatam Reef and Commonwealth waters of the Scott Reef complex KEF overlaps the Operational Area. These KEFs both include some outcrops where demersal fish may be present.

Vessel noise

Survey vessels will contribute noise into the marine environment; however, they will only use DP for short periods when undertaking stationary investigations or undergoing resupply. Survey vessels transiting on main engines will produce lower levels of underwater noise that is below the injury threshold for sensitive marine fauna (e.g. cetaceans), thereby limiting the potential for any impacts.

The results of the activity site specific noise modelling study are detailed in the section above and the results for maximum extents to thresholds for each scenario are summarised as follows:

A multipurpose survey vessel or USV in transit and not on DP (Scenario A) would exceed the marine mammal behavioural threshold out to 210m. This scenario would not exceed the marine mammal injury threshold of PTS for either VLF and LF cetaceans and would exceed the TTS threshold out to a maximum of only 60 m for VLF and LF cetaceans. For marine turtles the TTS threshold was reached within 30 m. No limits were reached for PTS for turtles. The impact threshold for fish was not reached.

A Geotechnical drilling vessel under DP (Scenario B) would exceed the marine mammal behaviour threshold out to a maximum distance of 3.61 km. This scenario would exceed the marine mammal injury threshold of PTS out to a maximum 100m and 70 m for VLF and LF cetaceans respectively, and TTS out to a maximum of 980 m and 680 m for VLF and LF cetaceans respectively. For marine turtles the TTS threshold was reached within a maximum 950m and 90 m for PTS. Potential impacts to fish are limited to within 40m.

A Geotechnical drilling vessel under DP undergoing a resupply by an OSV under DP (Scenario C) would exceed the marine mammal behaviour threshold out to a maximum distance of 7.93 km. This scenario would exceed the marine mammal injury threshold of PTS out to a maximum 120m and 90 m for VLF and LF cetaceans respectively, and TTS out to a maximum of 1.12 km and 800 m for VLF and LF cetaceans respectively. For marine turtles the TTS threshold was reached within a maximum 1.02 km and 110 m for PTS. Potential impacts to fish are limited to within 80m.

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A multipurpose survey vessel or USV under DP (Scenario D) would exceed the marine mammal behaviour threshold out to a maximum distance of 3.14 km. This scenario would exceed the marine mammal injury threshold of PTS out to a maximum 90m and 80 m for VLF and LF cetaceans respectively, and TTS out to a maximum of 670 m and 480 m for VLF and LF cetaceans respectively. For marine turtles the TTS threshold was reached within a maximum 510 m and 90 m for PTS. Potential impacts to fish are limited to within 30m.

Geophysical survey noise

Geophysical surveys can emit impulsive or non-impulsive sounds and depends entirely on the specific technology used in the equipment. Table 3-3 details the proposed survey techniques, and the estimated source sound pressure level, and dominant frequency range (kHz). Impulsive depends entirely on the specific technology used in the equipment (Table 3-3). The sounds of a chirp and boomers sub-bottom profiler have been considered to be non-impulsive sound sources when the sound waves of the different frequency components are not adding coherently as a single rise in pressure, nor is there a sharp negative pressure component to the pulse they sweep (BOEM 2017). However, for this GP survey the boomer sub-bottom profiler generates a broad band, high amplitude impulsive acoustic signal as detailed in Section 3.6.4. Multibeam sonar and vessels are characterised by the US NMFS (2023) as non-impulsive sound sources. The potential underwater noise generated from the survey and OSV vessels has been modelled under various scenarios and discussed above.

Acoustic modelling of sub-bottom profilers by Zykov (2013), MacGillivray et al. (2013) and McPherson and Wood (2017) indicates limited horizontal sound propagation outside of the main directional beams of sound. The modelling studies also indicate that PK and SEL_{24h} thresholds for PTS are not exceeded. The potential for TTS resulting from single-pulse PK pressure exposure is not predicted to occur, while the potential for TTS resulting from SEL_{24h} exposures is limited to a few metres from the moving sound source (Zykov 2013; McPherson and Wood 2017), which is not expected for mobile marine fauna as they are likely to move out of the area relatively quickly. Exceedance of the 160 dB re 1 µPa SPL behavioural response threshold is limited to within a few tens of metres in most instances, or up to a maximum of 150 m depending upon the instrument used, water depth and seabed sediment characteristics (Zykov 2013; McPherson and Wood 2017). McPherson and Wood 2017 modelled different types of SBP equipment with the acoustic threshold for behavioural effects in marine mammals to be exceeded at a maximum of only 2 m for CHIRP systems, and 145 m for boomers. This equipment is representative of the SBP equipment to be used for this Petroleum Activity.

The VHF micro-pulses of sound produced by the MBES and SSS also rapidly attenuate outside of the beam (MacGillivray et al. 2013; Zykov 2013). The high operating frequencies of these instruments place the majority of sound frequencies above the auditory range of most marine fauna species. Dolphins and other mid-frequency cetaceans, which have peak hearing sensitivity up to 110 kHz, with potential for some limited hearing ability up to approximately 160 kHz (NMFS 2018), may be able to detect a small amount of the sound energy from some MBES and SSS instruments operating in the lower frequency ranges (MacGillivray et al. 2013; Zykov 2013). Modelling indicates that sound emissions outside 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 hundred metres from the sound source for mid-frequency cetaceans (Zykov 2013; MacGillivray et al. 2013).

USBL positioning equipment also produces high-frequency sound, which may only be audible to dolphins and other mid-frequency cetaceans. The USBL has lower source levels than the other instruments proposed for the geophysical survey and is not expected to result in injury or hearing impairment. Some localised behavioural effects may occur in close proximity to the USBL, but the extent of any effect is expected to be smaller than that of other survey instruments and there are not expected to be any lasting behavioural effects.

Geotechnical survey noise

Sound emitted from geotechnical activities at the seabed (penetration tests and sampling boreholes) may be at levels that result in very localised behavioural effects to animals that happen to be exposed within <10 m; however, such effects will be temporary and the sound levels are well below those that may result in injury or hearing impairment (Erbe and McPherson 2017).

Marine Mammals

Marine mammals that may occur within the Operational Area are summarised in Section 4.6.3.

There is a pygmy blue whale migration and possible foraging BIA present within the Operational Area and migrating pygmy blue whales may be exposed to underwater noise generated by the Petroleum Activity.

The Conservation Management Plan for the Blue Whale (Commonwealth of Australia, 2015b), a recovery plan made under the EPBC Act, defines BIAs for pygmy blue whales, with particular emphasis placed on foraging areas and migration corridors.

Based on the *Guidance on Key Terms within the Blue Whale Conservation Management Plan* (DCCEEW, 2021), underwater noise emissions from the petroleum activities program must not:

- result in TTS or PTS to pygmy blue whales
- displace a pygmy blue whale from a foraging BIA.

Other migratory low frequency cetaceans that may occur seasonally in the Operational Area include fin, sei and humpback whales. These species undertake seasonal migrations and may transit through the Operational Area.

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Behavioural thresholds are exceeded for each vessel noise scenario modelled, from between 210m for a multipurpose vessel to 7.93 km for a resupply operation, and there is therefore potential for pygmy blue whales to be exposed to underwater noise levels that may alter their behaviour when they are in the region during seasonal migrations. The Operational Area only makes up a small proportion of the total possible foraging BIA and migration BIA with any potential impact on foraging behaviour or deviation in migratory routes of individuals considered unlikely and insignificant given the whales' extensive migration range and high mobility. In addition the vessel activities, particularly those that involve dynamic positioning are intermittent and of short duration (typically lasting hours to days), further reducing the likelihood of prolonged exposure or significant behavioural disturbance.

The geophysical survey activities are only expected to result in behavioural effects to cetaceans most likely within tens of metres, and possibly up to hundreds of metres, from the survey activities. Such localised effects and potential deviations are not expected to be significant given the transient nature of cetaceans or in the context of long-distance migrations undertaken by pygmy blue whales or other migratory species that might be present.

No injury – as defined by *Guidance on Key Terms within the Conservation Management Plan for the Blue Whale* (DCCEEW 2021) will credibly occur to pygmy blue whales. It is not credible that PTS or TTS effects will occur from vessel noise or geophysical equipment as individual animals are unlikely to remain within range of the activities (i.e. within a maximum 1.2 km for vessel resupply and less for single vessel operations, and a few hundred metres of the SBP geophysical survey equipment) for continuous durations long enough for the relevant sound exposure threshold to be exceeded, being 24 hours.

An animal remaining in the area ensonified above impact thresholds is unrealistic as:

- The highest noise generating activities are shorter (Vessel resupply typically requires < 8 hrs) and vessels are unlikely to remain on DP in one location for more than 24 hours during survey activities.
- Animals experiencing uncomfortable levels of noise are reasonably expected to move away from or avoid the sound source.

Individual fin, sei and humpback whales are also not expected to linger in proximity to vessels. Consequently, PTS and/or TTS will not credibly occur in any LF marine mammals because of the petroleum activity

The Petroleum Activity is a temporary one and mitigation measures are in place to further reduce sound exposure to cetaceans with the proposed mitigation measures for underwater noise in place for this activity including adaptive management detailed in 7.2.5. These measures can be implemented to ensure any blue whale can utilise a BIA without injury and reduce the risk of displacement occurring as per the *Guidance on Key Terms within the Conservation Management Plan for the Blue Whale* (DCCEEW 2021) that details mitigation measures must be implemented to reduce the risk of displacement occurring during operations where modelling indicates that behavioural disturbance within a foraging area may occur.

Overall, the activity is therefore not considered likely to prevent pygmy blue whales from utilising the BIAs, nor cause auditory impairment or present a high risk of behavioural disturbance resulting in displacement to any cetaceans in the region. No injury, mortality, population-level impacts or long-term ecological effects are expected.

Marine Turtles

Marine turtles may occur in the Operational Area (refer Section 4.6.2). There is reproduction BIAs for green and hawksbill turtles within 3 km of the Operational Area. There is also a nesting habitat deemed critical to the survival of green turtle at Scott Reef that is in close proximity to the Operational Area. The green turtle (Scott Reef-Browse Island Stock) peak nesting period is between December to March however, green turtles may be present year-round. Females nest on Sandy Islet before returning to nearshore foraging areas. Emerging green turtle hatchlings swim into the open ocean and are known to remain there for several years before eventually travelling to the feeding grounds as sub-adults, some returning to Sandy Islet as mature adults to lay eggs (Gilmore et al. 2013). Both female turtles and hatchlings may be sensitive to noise disturbance during this period. Marine Turtle Internesting is defined as the rest time taken by female turtles between laying successive clutches. Females typically lay several clutches during each nesting season. The Recovery Plan for Marine Turtles in Australia (2017) identifies anthropogenic threats (including noise) to be minimised to allow the long-term recovery of marine turtle populations.

The Recovery Plan for Marine Turtles (CoA 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). it is reasonable to expect that marine turtles may demonstrate avoidance or attraction behaviour to the noise generated by the activity however the Petroleum Activity is a temporary one. Turtles may exhibit behavioural responses when exposed to underwater noise, such as diving.

Survey vessels will contribute underwater noise to the marine environment; however, dynamic positioning (DP) will only be used for short periods . Any behavioural disturbance associated with vessel noise is therefore expected to be localised and temporary due to the short duration of activities at any one location.

Modelling of sub-bottom profilers (SBP) indicates that sound levels are predicted to fall below the 166 dB re 1 µPa SPL behavioural response threshold within a few metres to tens of metres of the source (Zykov 2013; McPherson and Wood 2017). The marine turtle audiogram suggests hearing sensitivity is concentrated within a relatively narrow band of the broader low-frequency range (Accomando et al. 2024). As such, in the absence of turtle-specific propagation

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modelling, the distances at which low-frequency cetacean PTS and TTS thresholds may be exceeded have been used as a conservative proxy to assess the potential spatial extent of impacts to marine turtles.

For low-frequency cetaceans, modelling studies indicate that PK and SEL_{24h} thresholds for PTS are not exceeded and that TTS resulting from single-pulse PK exposure is not predicted to occur (Zykov 2013; McPherson and Wood 2017). Potential TTS resulting from SEL_{24h} exposure is limited to a few metres from the moving source (Zykov 2013; McPherson and Wood 2017). As with cetaceans, this is not considered a credible scenario for marine turtlesas individuals are unlikely to remain within the affected area for sufficient time to accumulate the required exposure.

There is potential for disturbance to interesting behaviours of individual turtles although given the temporary nature of the disturbance unlikely to affect individual breeding success or impact marine turtles at the population level.

Overall, behavioural effects resulting from vessel operations, geophysical survey equipment and geotechnical activities are expected to be localised and temporary, generally within close proximity to the source attenuating quickly. It is unlikely that turtles would remain in the vicinity of the operation and would likely avoid the sound source on commencement of the activity, and after the start of the activity it is anticipated that marine fauna will avoid the sound of the activity. With control measures in place no injury, auditory injury, TTS or PTS is expected, and impacts to marine turtles at the population level are not anticipated.

Sea Snakes

The critically endangered Short-nosed Sea snake and Leaf-scaled Sea Snake may occur in the Operational Area. Conservation advice has indicated that oil and gas exploration activities have caused a decline in these species however, a Recovery Plan is not required as further research is required to fully understand the threats and ecological requirements of the species (DSEWPaC 2011a, 2011b). The Dusky Sea Snake is endangered and may occur in the Operational Area with the remaining dusky sea snake stronghold located at the Scott Reef complex. Conservation advice for the dusky sea snake is to ensure vessels are operating under minimal-noise guidelines in these areas (DCCEEW 2023).

Impacts of acoustic signals on sea snakes have not been researched in great depth. Chapuis, et al. 2019 provided the first experimental evidence of underwater hearing in sea snakes, measuring auditory evoked potentials in *Hydrophis stokesii*. The study demonstrated sensitivity to low frequency sound (40–600 Hz), with peak sensitivity around 60 Hz. However, overall auditory sensitivity was found to be relatively lower than that reported for bony fishes and marine turtles. Since there is limited guidance on hearing thresholds for sea snakes, the extent of potential impacts is conservatively considered however, sea snakes are unlikely to be encountered during the Petroleum activity. Guinea and Whiting (2005) reported that very few short-nosed sea snakes moved as far as 50 m from the reef flat. The nearest coral reef and seagrass habitat is Scott Reef (0.5 km west of Operational Area) and Seringapatam Reef (19 km NNE of Operational Area) and therefore sea snakes are unlikely to be encountered in high numbers in the Operational Area given its proximity to suitable reef habitat is greater than 50m and in water depths of >75m. Vessel noise may result in avoidance behaviour however, these behavioural impacts to sea snakes are likely to be restricted to very low numbers of potential individuals transiting through the area. No injury, mortality, population-level impacts or long-term ecological effects are expected.

Fish, Sharks and Rays

Modelling results indicate potential impacts to fish from vessel noise are limited to within 80m for all scenarios.

The potential for injury or TTS effects to fish resulting from single-impulse peak pressure exposure or accumulated exposures to geophysical survey equipment sound is limited to within approximately 1–2 m beneath or to the side of the sound source (Zykov 2013; McPherson and Wood 2017). Exposure at such close range is considered highly unlikely, particularly given the mobile nature of fish and the moving survey vessel.

As a result, impacts to fishes are expected to be limited primarily to localised and temporary behavioural responses. Demersal and pelagic fish species present within the Operational Area are primarily sensitive to close-range particle motion rather than sound pressure, and any behavioural effects are therefore expected to be limited to within tens of metres of the various geophysical and geotechnical sound sources (Popper et al. 2014; Zykov 2013; McPherson and Wood 2017).

Impacts to protected species of sharks and rays, including whale sharks, are not expected. Sharks do not possess swim bladders and are therefore less sensitive to sound pressure than many teleost fish species. In addition, the whale shark foraging BIA is located approximately 27 km from the Operational Area and does not overlap the survey activities.

Overall, impacts to fish, sharks and rays are expected to be limited to temporary and localised behavioural responses in the immediate vicinity of the activity. No injury, mortality, population-level impacts or long-term ecological effects are expected.

Potential impacts to ecosystems/habitats

Modelling of sound levels beneath SBP, MBES and SSS instruments (Zykov 2013; McPherson and Wood 2017) indicates there would be no impact to benthic invertebrates. Therefore, benthic habitats and communities, including those associated with KEFs, will not be affected by sound produced by the geophysical or geotechnical survey activities.

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Impacts to plankton will be limited to within just metres (McPherson and Wood 2017), which is negligible in the context of naturally variability.

Therefore, impacts to marine habitats, primary and secondary production (plankton) and ecosystems are not expected.

Cultural features and heritage values

Refer to Section 6.11 for an assessment of potential impacts to cultural features and heritage values from the Petroleum Activity. Related control measures that demonstrate that impacts are reduced to ALARP and are of an acceptable level have been captured in Section 6.11.

Cumulative underwater sound impacts

Potential impacts are expected to be limited to localised and temporary behavioural responses in the vicinity of vessel operations and geophysical or geotechnical survey activities. While multiple vessels may increase the area over which elevated noise levels occur, the potential cumulative sound has been modelled and discussed above with the extent of potential impacts being limited. No concurrent petroleum activities are expected.

There is no existing subsea infrastructure or vessel traffic within the Operational Area which may contribute to background underwater noise; and any cumulative effects are expected to be minor, localised and temporary.

Overall, given the limited spatial extent and low consequence of predicted behavioural responses, cumulative underwater sound impacts are not expected to result in lasting or population-level effects and do not increase the consequence rating of the impact.

Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[30]***	***Benefit in impact reduction***	***Proportionality***	***Control adopted***
Legislation, codes and standards				
Implement EPBC Regulations 2025 Part 8 Division 8.1 Interacting with Cetaceans, which includes the following: • Vessels will not travel greater than 6 knots within 300 m of a cetacean (caution zone). • Vessels will not approach closer than 50 m for a dolphin or 100 m for a whale (except animals bow riding). • Vessel will not approach within 300 m of a calf. If a calf appears, vessel will immediately withdraw at a constant speed of less than 6 knots. • If the cetacean shows signs of being disturbed, vessels will immediately withdraw from the caution zone	F: Yes. CS: Minimal cost. Standard practice.	EPBC Regulations 2025 Part 8 Division 8.1 Interacting with Cetaceans includes requirements relating to the speeds vessels can travel within particular distances of cetaceans. Reducing the travel speed of vessels can also reduce the sound levels that are produced, reducing the potential impact on cetaceans from survey vessels.	Controls based on legislative requirements – must be adopted.	Yes C 5.1

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Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[30]***	***Benefit in impact reduction***	***Proportionality***	***Control adopted***
at a constant speed of less than 6 knots.				
Vessels will comply with Biodiversity Conservation Regulations (WA) 2018 for whale shark speed control and separation distances: • Vessels will not travel greater than 6 knots within 250 m of a whale shark and not allow the vessel to approach closer than 30 m of a whale shark.	F: Yes. CS: Minimal cost. Standard practice.	Reducing the travel speed of vessels can reduce the sound levels that are produced, reducing the potential impact on whale sharks from survey vessels.	Controls based on legislative requirements – must be adopted.	Yes C 5.2
Good Practice				
Vessels will not travel greater than 6 knots within 300 m of a turtle (caution zone). If the turtle shows signs of being disturbed, vessels will immediately withdraw from the caution zone at a constant speed of less than 6 knots.	F: Yes. CS: Minimal cost.	Reducing the travel speed of vessels can reduce the sound levels that are produced, reducing the potential impact on turtles from survey vessels.	Benefits outweigh cost/sacrifice	Yes C 5.3
Implement adaptive management procedure, which includes seasonal restrictions, observation zones and additional management measures for pygmy blue whales. (See Section 7.2.5)	F: Yes. CS: Minimal cost.	Reduces the likelihood of individuals of pygmy blue whales being within proximity of the acoustic source where behavioural impact could occur. This control is intended to minimise the impact of noise emitting survey equipment to protected pygmy blue whales. A precautionary approach has been taken and the control has been applied to whales more broadly.	Benefits outweigh cost/sacrifice. Given the conservation status of pygmy blue whales, and to conduct the activity in a way that is not inconsistent with the Blue Whale Conservation Management Plan, conducting prestart visual observations prior to the start-up of noise emitting survey equipment is considered a proportionate measure.	Yes C 5.4
Trained crew to undertake the required pre-start observations and implement management measures. .	F: Yes CS: Costs associated with training crew members.	Having trained crew improves marine fauna identification, distance estimation and implementation of management measures.	Benefits outweigh cost/sacrifice	Yes C 5.5

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Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[30]***	***Benefit in impact reduction***	***Proportionality***	***Control adopted***
Experienced MFO onboard to undertake the required pre start observation and implement management measures.	F: No. Limited or no accommodation available onboard vessel for dedicated MFO CS: Costs associated with additional crew member onboard vessel during activity.	Limited impact reduction as observations and procedures are to be undertaken by trained crew	Not feasible	No
PAM	F: Disproportionate cost and monitoring from vessels already being undertaken. CS: Not considered, control not feasible.	Not considered, control not feasible.	Not considered, control not feasible.	No
Aerial Surveys	F: Disproportionate cost and monitoring from vessels already being undertaken CS: Not considered, control not feasible.	Not considered, control not feasible.	Not considered, control not feasible.	No
Soft starts for Geophysical equipment	F: Geophysical equipment cannot be ramped up CS: Not considered, control not feasible.	Not considered, control not feasible.	Not considered, control not feasible.	No
Professional judgement – eliminate				
Eliminate generation of noise from the vessels including DP.	F: No. Generation of noise from these sources cannot be eliminated due to operating requirements. Note that vessels operating 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
Eliminate generation of noise from OSV resupply of GT vessel in Operational Area	F: No. Generation of noise from these sources cannot be eliminated due to operating requirements. Note that vessels operating on DP may	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)[30]***	***Benefit in impact reduction***	***Proportionality***	***Control adopted***
	be a safety-critical requirement. CS: Inability to conduct the Petroleum Activity. Loss of project.			
Professional judgement – substitute				
No additional controls were identified.				
Professional judgement – engineered solution				
No additional controls were identified.				
Risk-based analysis				
N/A				
Company values				
N/A				
Societal values				
N/A				

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EPOs, PS and MC			
EPO	***Controls***	***PS***	***MC***
EPO 5 No injury of, or mortality to, EPBC Act (Cth) and BC Act (WA) listed marine fauna as a result of noise generated by the Petroleum Activity. EPO 6 No displacement of marine turtles from habitat critical during nesting/breeding (inc. internesting periods) and ensure biologically important behaviour can continue in biologically important areas. EPO 7 Undertake the petroleum activity in a manner that prevents injury to PBW and minimises the potential for biologically significant behavioural disturbance.	C 5.1 Implement EPBC Regulations 2025 Part 8 Division 8.1 Interacting with Cetaceans, which includes the following: • Vessels will not travel greater than 6 knots within 300 m of a cetacean (caution zone). • Vessels will not approach closer than 50 m for a dolphin or 100 m for a whale (except animals bow riding). • Vessel will not approach within 300 m of a calf. If a calf appears, vessel will immediately withdraw at a constant speed of less than 6 knots. • If the cetacean shows signs of being disturbed, vessels will immediately withdraw from the caution zone at a constant speed of less than 6 knots.	PS 5.1 Compliance with EPBC Regulations 2025 – Part 8 Division 8.1 (Regulation 8.05 and 8.06) Interacting with cetaceans.	MC 5.1 Records demonstrate no breaches with EPBC Regulations 2025 – Part 8 Division 8.1 (Regulation 8.05 and 8.06) Interacting with Cetaceans.
	C 5.2 Vessels will comply with *Biodiversity Conservation Regulations (WA) 2018* for whale shark speed control and separation distances: • Vessels will not travel greater than 6 knots within 250 m of a whale shark and not allow the vessel to approach closer than 30 m of a whale shark.	PS 5.2 When within 250 m of a whale shark, vessels do not travel faster than 6 knots nor approach within 30 m.	MC 5.2 Records demonstrate no breaches of vessel speed requirements when within 250 m of a whale shark.
	C 5.3 Vessels will not travel greater than 6 knots within 300 m of a turtle (caution zone). If the turtle shows signs of being disturbed, vessels will immediately withdraw from the caution zone at a constant speed of less than 6 knots	PS 5.3 When within 300 m of a turtle, vessels do not travel faster than 6 knots.	MC 5.3 Records demonstrate no breaches of vessel speed requirements when within 300 m of a turtle.
	C 5.4 Implement adaptive management procedure, which includes seasonal restrictions, observation zones and additional management measures, for pygmy blue whales (See Section 7.2.5)	PS 5.4 Implementation of the adaptive management procedures by survey vessels to minimise underwater noise emissions (Section 7.2.5).	MC 5.4. Records demonstrate compliance with management procedures as outlined.

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EPOs, PS and MC			
EPO	***Controls***	***PS***	***MC***
	C 5.5 Trained crew to undertake the required pre start observations and implement management measures as per C 5.4	PS 5.5 Trained crew implement adaptive management procedure.	MC 5.5 Records demonstrate trained crew implemented adaptive management procedures.

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6.8.4 Routine light emissions: external lighting on survey vessels

Context		
Survey vessels – Section 3.8	Physical Environment – Section 4.4 Habitats and Biological Communities – Section 4.5	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 light emissions from vessel operations					X		A	F	-	-	PJ	Broadly Acceptable	EPO 2 EPO 6 EPO 7 EPO 8

Description of Source of Impact

Vessel operations

Routine light emissions include light sources that alter the ambient light conditions in an environment at night. The survey vessels will routinely use external lighting to facilitate navigation and conduct safe operations at night throughout the Petroleum Activity. This lighting typically consists of bright white (i.e. metal halide, halogen, fluorescent) lights and is not dissimilar to lighting used for other offshore activities, including fishing and shipping.

Lighting levels will be determined primarily by operational safety and navigational requirements under relevant legislation, specifically the *Navigation Act 2012* (Cth). Survey vessels will be lit to maintain operational safety on a 24-hour basis. External light emissions from the vessels are typically managed to a level that maintains good night vision for crew members. Lighting on the vessels is used to allow safe operations during night hours, and to communicate the vessel's presence and activities to other marine users (i.e. navigation lights). Lighting is required to safely operate the vessels and cannot reasonably be eliminated.

Geophysical and geotechnical activities may be completed over several multi-week campaigns (typically 20–60 days in duration) split over the five-year period of this EP. Survey activities within the Operational Area are estimated to take up to a maximum of 90 days per year (during anytime in a calendar year). The vessels involved will be operating 24 hours a day, seven days a week, while operations are underway.

Due to the transient nature of the survey activity, the source location of the light emissions will vary across the Operational Area throughout the activity.

Lighting from survey 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 the vessel (namely height above sea level) and environmental conditions (e.g. cloud cover). The external lighting, which is located over the entire vessel, is not expected to be >20 m above sea level. The distance to the horizon at which components of the vessel will be directly visible can be estimated using the formula of:

$$horizon\ distance = 3.57 \times \sqrt{height}$$

where 'horizon distance' is the distance to the horizon at sea level in kilometres and 'height' is the height above sea level of the light source in metres. Using this formula, the approximate distances at which vessel lighting will be visible at sea level is about 16 km from the vessel, based on the typical survey vessels that are proposed to be used for the Petroleum Activity.

While the line of sight may extend to this 16 km distance from the source (vessel), the light density (measured in Lux – which represents the intensity of light that arrives at or leaves a surface, as perceived by the human eye) rapidly

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decreases as distance increases from the source of the light. Monitoring undertaken as a part of Woodside's 2014 study indicated light density (from navigational lighting) attenuated to below 1.00 Lux and 0.03 Lux at distances of 300 m and 1.4 km, respectively, from the source (a MODU). Light densities of 1.00 Lux and 0.03 Lux are comparable to natural light densities experienced during deep twilight and during a quarter moon. Navigational lighting levels from survey vessels is expected to be appreciably lower than lighting on a MODU, hence light emissions from the survey vessels are expected to be below 1.00 Lux within 300 m from the source.

Impact Assessment

Environmental Value(s) Potentially Impacted

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. 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 (CoA 2020).

The Operational Area/s are in close proximity to the following relevant BIAs and critical habitat (Section 4.6):

- nesting critical habitat for the survival of the green turtles (Operational Area Part A),
- little tern resting (Operational Area Part A)

Additional species presence including green sawfish, leaf-scaled and short-nosed seasnake were the only ones identified as occurring within the 20 km buffer.

Light emissions have the potential to disrupt ecological processes that rely on natural light for visual cues. Light emissions can affect fauna in two main ways:

- Behaviour: many organisms are adapted to natural levels of lighting and the natural changes associated with the day and night cycle as well as the phase of the moon. Artificial lighting has the potential to create a constant level of light at night that can override these natural levels and cycles.
- Orientation: 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 override natural cues, leading to disorientation.

The impact assessment for above-surface artificial light emissions has focused on seabirds and marine turtles, as these taxa are recognised as being susceptible to behavioural disruption and disorientation from artificial light sources (CoA, 2020).

Migratory birds

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 et al. 2014). The Operational Area may be visited by migratory and oceanic birds but does not contain emergent land that could be used as roosting or nesting habitat or known critical habitats for seabirds or migratory shorebirds. Although Operational Area Part A overlaps a small peripheral part of the little tern resting BIA associated with Scott Reef and the 20 km buffer around Operational Area Part B, it does not intersect any seabird or migratory shorebird bereding BIAs.

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 (CoA 2020). The nearest emergent land is Sandy Islet (~23.2 km east from Operational Area Part A) and Ashmore Reef (~197 km north of Operational Area Part A), outside of the light impact buffer (20 km).

Any behavioural disturbance to birds is expected to be temporary, localised and limited to individuals in the immediate vicinity of survey vessels while operations are underway and not affect nesting birds or fledglings.

The light source from the vessels within the Operational Areas will be temporary and only when operations are occurring. Interactions with seabirds are therefore expected to be unlikely and any impacts are predicted to be at an individual and not a population level. Therefore, any temporary behavioural disturbance of birds will be localised around the light sources and not result in a substantial adverse effect on a population of species or its lifecycle.

Artificial light from the Petroleum Activity is not predicted to disrupt critical breeding behaviours within important nesting habitat or displace seabirds from nesting habitat

Consequently, impacts are expected to be limited to short-term behavioural responses with no lasting effect on seabird populations.

Marine turtles - hatchlings

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. Sea-finding behaviour of hatchlings is also impacted by light type and intensity, with broader spectrum or 'whiter' light sources (e.g. light-emitting diodes and metal halide lamps) having more of an impact

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on hatchling sea-finding orientation compared to a narrow spectrum of light, such as low-pressure sodium lighting (Gomez Isaza et al. 2025).

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 causing them to spend more time in the predator-rich nearshore waters (Thums, et al., 2016; Truscott, et al., 2017; Wilson, et al., 2018).

The nearest turtle nesting locations to the Operational Area are on Sandy Islet at Scott Reef (23.2 km west). The green turtle and hawksbill reproduction BIA is overlapped by the 20km light buffer. Geophysical survey activities are mobile and will not remain in any one location for extended periods, thereby reducing the duration of potential light exposure at a given receptor location. Geotechnical vessels will be stationary whilst undertaking surveys, but typically for short durations before moving onto another location.

As such, the risk of significant numbers of dispersing hatchlings becoming attracted to direct light or sky glow from survey vessels is considered low. This is supported by the findings of a desktop lighting impact assessment for the Scarborough Project, conducted by Pendoley Environmental (2020). At a range of ~20 km, 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 survey vessels, following sunrise, any effect of these light sources on hatchlings will be eliminated, allowing dispersal behaviour to resume. Given the closest beach where hatchlings may be present is over 20 km away from the closest point of the Operational area, it is likely that hatchling density will be lower than the nearer shore waters.

Any impacts to hatchling turtles from artificial light will be limited to possible short-term behavioural impacts to isolated individual hatchlings offshore, with no lasting effect to the species.

Marine turtles – adults

Artificial lighting may affect where nesting adult turtles emerge onto the beach, the success of nest construction, whether nesting is abandoned, and the seaward return of adults (Salmon et al. 1995a, 1995b; Salmon and Witherington 1995). Such lighting is typically from residential and industrial development at the coastline, rather than offshore from nesting beaches.

The internesting period is the duration between each successive clutch during that season. The females remain close to rookeries or beaches; therefore, designated and defined buffer zones have been gazetted immediately seaward from nesting beaches. While there are critical habitat overlapping the Operational Area and reproduction BIA within the 20km light buffer, marine turtles do not use light cues to guide these behaviours. Furthermore, there is no evidence, published or anecdotal, to suggest that internesting turtles are impacted by light from offshore vessels. As such, light emissions from the survey vessels are unlikely to result in displacement of, or behavioural changes to individuals in these life stages (Pendoley Environmental 2020).

The nearest nesting beaches are on Sandy Islet (Scott Reef), approximately 23.2 km from Operational Area Part A, outside of the 20 km buffer recommended for light impact assessment, meaning direct light from the survey vessels will not be visible to nesting adult turtles. Furthermore, nesting females are not considered highly vulnerable to disorientation due to artificial light (Pendoley Environmental 2020). Furthermore, the light source would be located offshore in the same general direction as the females' normal return to sea following nesting. As a result, vessel light sources is unlikely to discourage females from nesting, or alter nest site selection, and therefore will not displace females from nesting habitat.

Although individual turtles that may be foraging within or adjacent to the Operational Area may occur, marine turtles do not use light cues to guide these behaviours. As such, light emissions from survey vessels are unlikely to result in more than localised behavioural disturbance to isolated transient individuals, with low-level effect to the species.

Other marine fauna

Zooplankton, including krill, may be impacted by vessel lighting via disruption to diel vertical migration, the daily movement of individuals in the water column in response to natural changes ambient light levels (Berge, et al., 2020). Increased light levels can cause zooplankton to migrate to deeper waters where light levels are lower, with cascading trophic impacts. Such impacts would be highly localised within the vicinity of the vessel (e.g. up to 200 m depth, Berge, et al. (2020)) and low-level given the vessel is continually moving, albeit at a slow speed (unlike in Berge, et al. (2020)). Given the transient nature of the light sources, impacts to zooplankton populations is expected to be localised and low-level and is not expected to result in ecosystem level impacts.

Lighting from the presence of a vessel may result in the localised aggregation of fish below the vessel. These aggregations of fish are considered localised and temporary and any long-term changes to fish species, including whale sharks, composition of abundance is considered highly unlikely. Similarly, any localised impacts to marine fish are not expected to impact on any commercial fishers in the area.

Protected Areas

The Operational Area do not overlap any protected areas. However, the Scott Reef Nature Reserve is located adjacent to the Operational Area, approximately 5.6 km to the west of Operational Area Part A (refer to Figure 4-14). Light emissions from GPGT survey vessels may be visible from within the Nature Reserve. Species within the Nature Reserve have been assessed in the sections above. Given the small scale of impacts and the limited overlap of activities, light emissions from GPGT survey vessels is not expected to impact the values of the Nature Reserve (values are described in the Master Existing Environment document in Appendix C).

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Cultural features and heritage values

Refer to Section 6.11 for an assessment of potential impacts to cultural features and heritage values from the Petroleum Activity. Related control measures demonstrate that impacts are reduced to ALARP and are of an acceptable level have been captured in Section 6.11 below.

Cumulative impacts

No significant cumulative impacts over the life of the Petroleum Activity or in relation to other operations and activities in the region (e.g. Ichthys or Prelude) are expected.

Demonstration of ALARP				
Control Considered	***Control Feasibility (F) and Cost/Sacrifice (CS)[31]***	***Benefit in Impact/Risk Reduction***	***Proportionality***	***Control Adopted***
Legislation, Codes and Standards				
No additional controls were identified.				
Good Practice				
Lighting will be limited to the minimum required for navigational and safety requirements, with the exception of emergency events.	F: Yes. Lighting is typically appropriate for navigation and safety. CS: Minor.	Given the potential impacts to turtles during this activity is insignificant, implementation of this control would not result in a reduction in consequence.	While the control does not result in significant reduction of impacts, it is good practice and not at significant cost.	Yes C 7.1
Implement the Woodside Offshore Seabird Management Plan in accordance with Section 7.2.4	F: Yes. The management plan is an internal Woodside process developed to manage the impacts of artificial light emissions. CS: Minimal cost/sacrifice.	Implementing a Seabird Management Plan will enable standardised data collection to better understand seabird interactions with survey vessels, provide guidance on seabird management to enable the best outcomes for grounded birds and facilitate escalation and adoption of management actions within 24 hours, preferably before next nightfall, should triggers be met.	While the control does not inherently result in significant reduction of impacts, it is good practice and not at significant cost.	Yes C 8.1
Professional Judgement – Eliminate				
Substitute external lighting with 'turtle-friendly' light sources (reduced emissions in turtle visible spectrum).	F: Yes. Replacement of external lighting with turtle-friendly lighting is technically feasible, although is not considered to be practicable. CS: Significant cost sacrifice. The retrofitting of all external lighting on the vessels would result in considerable cost and time expenditure. Considerable logistical effort to source	Given the potential impacts to turtles during this activity are insignificant, implementing this control would not reduce the consequence.	Grossly disproportionate. Implementing the control requires considerable cost sacrifice for minimal environmental benefit. The cost/sacrifice outweighs the benefit gained.	No

[31] *Qualitative measure*

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Demonstration of ALARP				
Control Considered	***Control Feasibility (F) and Cost/Sacrifice (CS)[31]***	***Benefit in Impact/Risk Reduction***	***Proportionality***	***Control Adopted***
	sufficient inventory of the range of light types onboard the vessel.			
Use of curfews to manage light emissions at night.	F: Yes. Variation of Petroleum Activity timing to manage light emissions at night is technically feasible, although it is not considered to be practicable. CS: Significant cost sacrifice. The use of curfews to limit light emissions at night would substantially limit operations to only daylight hours. Additionally, the survey vessels are required to use a baseline level of lighting for navigational safety, meaning the use of curfews to limit project operations to daylight hours would not eliminate light emissions at night. The use of curfews would effectively double the duration of the campaign, resulting in increased environmental impacts and risks and a significant increase in cost.	Given the potential impacts to turtle and seabird species during this activity are insignificant, implementing this control would not reduce the consequence.	Grossly disproportionate. Implementing the control requires considerable cost sacrifice for minimal environmental benefit with respect to light emissions and increased environmental impacts in other aspects. The cost/sacrifice outweighs the benefit gained.	No
Vary the timing of the Petroleum Activity to avoid turtle nesting and hatching peak periods.	F: No. Timing of survey activities is currently undetermined, and due to vessel availability and operational requirements, undertaking activities during migration seasons may not be able to be avoided. CS: Significant cost and schedule impacts due to delays in securing survey vessel for specific timeframes.	Not considered, control not feasible.	Not considered, control not feasible.	No
Complete survey activities in the Operational Area outside of peak turtle hatchling emergence period (Dec to Mar)	F: No. Timing of survey activities is currently undetermined, and due to vessel availability and operational requirements, undertaking activities during peak hatching seasons may not be able to be avoided. CS: Significant cost and schedule impacts due to	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)[31]***	***Benefit in Impact/Risk Reduction***	***Proportionality***	***Control Adopted***
	delays in securing survey vessel for specific timeframes.			
Professional Judgement – Substitute				
No additional controls were identified.				
Professional Judgement – Engineered Solution				
No additional controls were identified.				
Risk-based analysis				
N/A				
Company values				
N/A				
Societal values				
N/A				
ALARP statement: On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.3.4.2) and Woodside's criteria for demonstrating ALARP (Section 2.4.1), Woodside considered the adopted controls appropriate to manage potential impacts associated with routine light emissions from the survey vessels. Efforts will be made to minimise unnecessary disturbance from light and has been investigated above.				

Demonstration of acceptability
Acceptability statement: The impact/risk assessment has determined that, given the adopted controls, routine light emissions from the survey vessels may result in no lasting effect with localised impact not significant to environmental receptors such as turtles, fish or seabirds. Section 6.8.4 demonstrates that the Petroleum Activity is not inconsistent with any recovery plan of threat abatement plan for a listed threatened species of ecological community. Regard has also been given to relevant conservation advice and wildlife conservation plans during the assessment of potential impacts. On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.3.4.2) and Woodside's criteria for demonstrating acceptability (Section 2.4.2), 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.

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EPOs, PS and MC			
EPOs	***Controls***	***PS***	***MC***
EPO 6 No displacement of marine turtles from habitat critical during nesting/breeding (inc. internesting periods) and ensure biologically important behaviour can continue in biologically important areas. EPO 7 No impacts to marine fauna greater than that caused by minimum required light emissions for safe work and navigation.	C 7.1 Lighting will be limited to the minimum required for navigational and safety requirements, with the exception of emergency events.	PS 7.1 Lighting will be limited to that required for safe work/navigation.	MC 7.1 Inspection by Woodside Site Representative and memo verifies no excessive light being used.
EPO 8 No adverse effects greater than a change to behaviour, with no lasting effect to seabirds from artificial light emissions during the Petroleum Activity.	C 8.1 Implement the Woodside Offshore Seabird Management Plan in accordance with Section 7.2.4	PS 8.1 Implementation of the Woodside Offshore Seabird Management Plan by Petroleum Activity vessels to minimise potential impact should nocturnal seabird groundings occur.	MC 8.1.1 Relevant crew inductions to include requirements under the Offshore Seabird Management Plan.
			MC 8.1.2 Seabird interactions (where occurrent) recorded in offshore marine fauna log.
			MC 8.1.3 Copy of regulatory reports completed as required in accordance with the Offshore Seabird Management Plan.

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6.8.5 Routine atmospheric and greenhouse gas emissions: fuel combustion

Context		
Survey vessels – Section 3.8	Physical Environment – Section 4.4	Consultation – Section 5

Impact evaluation summary

Source of impact	*Environmental value potentially impacted*						*Evaluation*						
	Marine Sediment	Water Quality	Air Quality (inc odour)	Ecosystems/ Habitat	Species	Socio-economic	Decision Type	Consequence/ Impact	Likelihood	Risk Rating	ALARP Tools	Acceptability	Outcome
Exhaust emissions associated with internal combustion engines and incinerators on survey vessels			X				A	F	-	-	LC S GP PJ	Broadly Acceptable	EPO 9

Description of source of impact

Atmospheric and GHG emissions associated with internal combustion engines (including all equipment and generators) and incineration activities (including onboard incinerators) will be generated by the survey vessels during the Petroleum Activity. These have been classified into two categories:

- Atmospheric emissions (non-GHG emissions) are gases or particles produced associated with survey vessels within the Operational Area, which are discharged to the atmosphere and pose a recognised level of adverse effect on human health and/or flora and fauna.
- GHG emissions are those gasses within the atmosphere that absorb long-wave radiation, and thus trap heat reflected from the Earth's surface.

The geophysical and geotechnical survey vessels are anticipated to emit up to 7 tonnes of GHG per day. Considering the duration of the Petroleum activities (90 days per year throughout the 5 year life of the EP, refer to section 3.5), 3,150 tonnes of GHG emissions are anticipated (Table 6-9). Helicopter use has not been provided for in this EP however may be used in emergency situations.

Table 6-9: Greenhouse gas emissions and sources

Source	GHG emissions released (tonnes of carbon dioxide equivalent)
Geophysical/geotechnical operations	
Multipurpose/Geotechnical Drilling Vessel (90 days per year)	630
Total GHG emissions over 5 year life of EP	**3,150**

Impact assessment

Environmental value(s) potentially impacted

Air quality (atmospheric pollutants)

Fuel combustion has the potential to result in localised, temporary reduction in air quality. Potential impacts include a localised reduction in air quality and contribution to greenhouse gas emissions. Given the short duration and the offshore location of the Petroleum Activity (~397 km NE of Broome), 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.

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Atmospheric emissions can cause direct impacts to fauna, if they are in the presence 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 & Holloway, 2017). While a BIA for little tern resting overlaps Operational Area Part A, (refer to Section 4.6.4) species' breeding occurs from June to October (Table 4-13). Given there are no significant releases of atmospheric emissions associated with the Petroleum Activity and the vessels will be moving, facilitating dispersion in an open offshore environment, extended emissions exposure is not expected to occur to any marine fauna species. Injury or mortality to fauna as a result of atmospheric releases are not expected.

Aesthetic value

Atmospheric emissions have the potential to introduce odour and visual amenity issues which can result in changes to the aesthetic value of an area.

Given the distance from shore of the Petroleum Activity (~235 km) and the short duration of the activities, the potential for a change in air quality from atmospheric emissions resulting in a change to aesthetic value for tourism/recreation or settlements is not considered to be credible. Therefore, a change in aesthetic value from atmospheric emissions associated with Petroleum Activity is negligible.

Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[32]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
Legislation, codes and standards				
Survey vessels comply with Marine Order 97 (Marine pollution prevention – air pollution), as applicable to vessel class	F: Yes. CS: Minimal cost. Standard practice.	Legislative requirements to be followed may slightly reduce the likelihood of air pollution.	Control based on legislative requirements – must be adopted.	Yes C 9.1
Provide emissions data where relevant to vessel contractor to enable legislative reporting requirements under the *National Greenhouse and Energy Reporting Act 2007* to be met.	F: Yes. CS: Standard practice. Required by Woodside standards.	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 C 9.2
Good practice				
No additional controls were identified.				
Professional judgement – Eliminate				
Do not combust fuel.	F: No. There are no 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
Professional judgement – Substitute				
No additional controls were identified.				
Professional judgement – Engineered Solution				
No additional controls were identified.				

[32] *Qualitative measure*

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Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[32]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
Risk-based analysis				
N/A				
Company values				
N/A				
Societal values				
N/A				
ALARP statement: On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A Section 2.3.4.2) and Woodside's criteria for demonstrating ALARP (Section 2.4.1), Woodside considers the adopted controls appropriate to manage potential impacts associated with the potential impacts of fuel combustion. As no reasonably practicable additional/alternative controls were identified that would further reduce the impacts without disproportionate sacrifice, the impacts are considered ALARP.				

Demonstration of acceptability
Acceptability statement: The impact assessment has determined that, given the adopted controls, fuel combustion is unlikely to result in a potential impact greater than a temporary decrease in local air quality and/or water quality standards, with no lasting effect, localised impact not significant to environmental receptors. Further opportunities to reduce the impacts have been investigated above. The controls adopted are considered good survey practice/industry best practice and meet the legislative requirements within Marine Order 97. Section 6.8.5 demonstrates that the Petroleum Activity is not inconsistent with any recovery plan of threat abatement plan for a listed threatened species of ecological community. Regard has also been given to relevant conservation advice and wildlife conservation plans during the assessment of potential impacts. On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.3.4.2) and Woodside's criteria for demonstrating acceptability (Section 2.4.2), 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, EPSs and MC			
EPOs	***C***	***PS***	***MC***
EPO 9 Minimise GHG emissions from vessels through efficient fuel usage and consideration of fuel types used.	C 9.1 Survey vessels comply with Marine Order 97 (Marine pollution prevention – air pollution) as applicable to vessel class	PS 9.1 Survey vessels compliant with Marine Order 97 (Marine pollution prevention – air pollution) to restrict emissions to those needed to perform the activity.	MC 9.1 Marine Assurance inspection records demonstrate compliance with Marine Order 97.

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EPOs, EPSs and MC			
EPOs	***C***	***PS***	***MC***
	C 9.2 Provide emissions data where relevant to vessel contractor to enable legislative reporting requirements under the National Greenhouse and Energy Reporting Act 2007 to be met.	PS 9.2 Emissions data reporting is undertaken, as required	MC 9.2 Records demonstrate emissions data reporting was completed as required

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6.8.6 Routine and non-routine discharges to the marine environment: survey vessels

Context		
Survey vessels – Section 3.8	Physical Environment – Section 4.4 Habitats and Biological Communities – Section 4.5	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
Routine discharge of sewage, grey water and putrescibles to marine environment from survey vessels		X					A	F			LCS GP PJ	Broadly Acceptable	EPO 10
Routine discharge of deck and bilge water to marine environment from survey vessels		X					A	F			LCS GP PJ	Broadly Acceptable	EPO 10
Routine discharge of cooling water or brine to the marine environment from survey vessels		X					A	F			LCS GP PJ	Broadly Acceptable	EPO 10
Routine discharge of drill cuttings and chemicals during geotechnical drilling to the marine environment from survey vessels		X					A	F			LCS GP PJ	Broadly Acceptable	EPO 10
Non-routine discharge of firefighting media		X					A	F			LCS GP PJ	Broadly Acceptabl	EPO 10

Description of source of impact

The vessels are likely to routinely generate/discharge:

- small volumes of grey water to the marine environment
- relatively small volumes (routinely/periodically) of bilge water, which can contain water, oil, detergents, solvents, chemicals, particles and other liquids, solids or chemicals
- variable water 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
- cooling water from machinery engines and brine water produced during the desalination process of reverse osmosis to produce potable water onboard the survey vessels.

Non-routine survey vessel discharges may include firefighting foams, used in the event of an emergency. Survey vessels may be equipped with in-built or portable firefighting foam systems which typically supply 3% aqueous film-forming foam (AFFF) concentrates which may be used in the event of an emergency, such as a vessel fire.

Environmental risks relating to disposal/discharges above regulated levels or incorrect disposal/discharge of waste would be unplanned (non-routine/accidental) and are addressed in Section 6.9.6.

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Drill cuttings

The geotechnical seabed coring will result in the indirect discharge of a small quantity of drill cuttings and fluid at the seafloor (refer Section 6.8.2). Drilling fluid will consist primarily of seawater and may have small quantities of additives. These additives are considered to be very low toxicity (as assessed through Woodside's Chemical Selection and Assessment Environment Guideline) as described in Section 6.8.2 and are expected to dilute rapidly upon discharge; as such, no toxic effects to biota are expected to occur.

All drilling fluids used during the drilling process will be discharged from the borehole at the seabed including small amounts of excess fluid which may be produced. Volumes of excess drilling fluid requiring discharge will be limited as fluids are mixed for use on an as needs basis.

Impact assessment

Environmental value(s) potentially impacted

The survey vessels will routinely discharge (daily if necessary) relatively small volumes of grey water and bilge water to the marine environment in compliance with MARPOL requirements. It is noted that sewage and putrescible wastes are not allowed to be discharged within 3 nm of land but may be discharged beyond 3 nm (including outside of the Operational Area) so long as it is discharged in accordance with MARPOL requirements. No significant impacts are anticipated because of the minor quantities involved, localised area of impact, high level of dilution into oceanic waters and high biodegradability/low persistence of the wastes disposed.

Bilge tanks receive fluids from many parts of the vessel. Bilge water can contain water, oil, detergents, solvents, chemicals, particles and other liquids, solids or chemicals. Treatment of bilge water will be conducted using an oily water separator or transported onshore for treatment and disposal. However, if not treated prior to discharge there would be potential for a negligible and localised increase in nutrient concentrations due to the high level of dilution and the natural daily nutrient flux that occurs within the region. The potential impact from routine discharge of treated or untreated sewage, grey water, bilge water and putrescible wastes is expected to be low.

The discharges outlined, which may include other non-organic contaminants (e.g. bilge water, deck drainage and cooling water), will be rapidly diluted when discharged. Variable water discharge from the vessel deck directly overboard or vial deck drainage systems could also occur. Water sources could include rainfall events and/or from deck activities such as cleaning/wash-down of equipment/decks. They are expected to be in very small quantities and concentrations that don’t pose any significant risk to any relevant receptors. As such, no significant impacts from the planned (routine and non-routine) discharges listed above are anticipated, because of the minor quantities involved and the expected localised mixing zone and high level of dilution into the open water marine environment of the Operational Area.

Drilling fluid discharges are expected to increase turbidity and total suspended solids (TSS) levels above ambient concentrations above the seabed for a short duration during geotechnical drilling. Given the very small volumes discharged short duration and selection of low toxicity (as assessed through Woodside's Chemical Selection and Assessment Environment Guideline), the potential impacts are expected to be negligible.

Aqueous Film Forming Foams are typically comprised of a mix of organic and fluorinated surfactants, however novel and emerging AFFF products may also be comprised of fluorine-free formulations. When discharged in bodies of water, both fluorine containing and fluorine-free AFFF formulations may deplete dissolvable oxygen content. However, when diluted in low concentrations such as in the event of application in a fire, these foams are considered to have relatively low toxicity (Department of Environmental and Heritage Protection 2016). Further, concerns regarding contamination and the toxicity and bioaccumulation potential of AFFF discharges are typically associated with land and waterways near to sites with frequent or prolonged applications. This includes military sites such as defence areas and civilian sites such as airports and industrial areas (Moody et al. 2000; Hu et al. 2016). The non-routine discharge of AFFF in open water environment of the Operational Area in the event of a fire is not consistent with these conditions.

Given the toxicological effects of foam are associated with sites of frequent or prolonged applications and the notion that any non-routine AFFF discharges in the event of an emergency during the activity would be expected to rapidly disperse in the open water environment, it is expected that any impacts would be localised and short-term in nature. Furthermore, potential impacts of AFFF discharge in the event of an emergency are outweighed by the environmental and health and safety benefits that are achieved through suppressing fire and hence, mitigating potential for further adverse impacts.

Cumulative impacts

The survey vessels will be continuously moving in the Operational Area during the majority of the survey with only short stationary periods during the collection of geotechnical survey data. These routine and non-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 are expected to be localised and short term, 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, cetaceans, fish, Section 4.6); however, given the localised extent of cumulative impacts from vessel discharges within the Operational Area, significant impacts to marine fauna are not expected.

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Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[33]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
Legislation, codes and standards				
Apply Marine Order 95 (Marine pollution prevention – garbage) as appropriate to vessel class	F: Yes. CS: Minimal cost. Standard practice.	No reduction in consequence would result.	Controls based on legislative requirements – must be adopted.	Yes C 10.1
Comply with Marine Order 96 (Marine pollution prevention – sewage) as appropriate to vessel class	F: Yes. CS: Minimal cost. Standard practice.	No reduction in consequence would result.	Controls based on legislative requirements – must be adopted.	Yes C 10.2
Comply with Marine Order 91 (Marine Pollution prevention – oil) as relevant to vessel class, which includes mandatory measures for processing oily water before discharge	F: Yes. CS: Minimal cost. Standard practice.	No reduction in consequence would result.	Controls based on legislative requirements – must be adopted.	Yes C 10.3
Vessel firefighting system (portable or in-built) to be consistent with Marine Order 15 (Construction—fire protection, fire detection and fire extinction) requirements related to the use and storage of firefighting foams containing perfluoroctane sulfonic acid (PFOS) including: • For vessels constructed on or after 1 January 2026, no use or storage of extinguishing media containing PFOS. • For vessels constructed before 1 January 2026, no use or storage of extinguishing media containing PFOS, beyond the date of first survey on or after 1 January 2026.	F: Yes. CS: Minimal cost. Standard practice.	Consistency with Marine Order 15 requirements for vessel firefighting systems may reduce the presence of PFOS containing firefighting foams on vessels.	Control based on legislative requirements – must be adopted.	Yes C 10.5
Good practice				
Implement Woodside's Chemical Selection and Assessment	F: Yes. CS: Minimal cost. Standard practice.	Selection and assessment of chemicals in accordance with the	Benefits outweigh sacrifice.	Yes C 10.4

[33] *Qualitative measure*

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Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[33]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
Environment Guideline, or equivalent.	Where Gold/Silver/E/D OCNS rating (and no OCNS substitution or product warning), chemicals are selected – no further assessment required. If chemicals with a different OCNS rating, sub warning or non-OCNS rated chemicals are required chemicals will be assessed in accordance with the guideline prior to use.	Woodside process, reduces environmental impacts associated with planned chemical discharge.		
Professional judgement – Eliminate				
No additional controls were identified.				
Professional judgement – Substitute				
Store, transport and treat/dispose all greywater, and all bilge wastes onshore.	F: No. Would present additional safety and hygiene hazards resulting from storing, loading and transporting the waste material. CS: Not considered, control not feasible.	Not considered, control not feasible.	Not considered, control not feasible.	No
Monitor the ambient water quality during discharge of operational fluids to verify impact during activity.	F: Yes. CS: Undertaking sampling would incur the following costs: • For in-water sampling using ROV – time and logistics for tool change-out from operational tools to specialised sampling tools. • Additional personnel onboard to operate ROV and coordinate sampling program. • Low ROV availability due to operations can limit time to complete environmental monitoring. • If additional ROV is required on the vessel, deck space	Minimal environmental benefit would be gained by monitoring during the activity. Monitoring could be used to inform additional control measures in future activities, although it's not guaranteed that additional controls would be feasible, or if they would provide any environmental benefit.	Based on the nature of the activity (i.e. predictable impacts) and relatively low sensitivity of the area application of an environmental monitoring control is considered grossly disproportionate. Cost/sacrifice outweighs the benefit to be gained in the context of the existing environment (open ocean communities).	No

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Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[33]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
	and resources to run/store/service ROV. • Resources for sample processing (space/ equipment/ personnel).			
Professional judgement – Engineered Solution				
No additional controls were identified.				
Risk-based analysis				
N/A				
Company values				
N/A				
Societal values				
N/A				
ALARP statement: On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.3.4.2) and Woodside's criteria for demonstrating ALARP (Section 2.4.1), Woodside considers the adopted controls appropriate to manage potential impacts/risks associated with planned (routine and non-routine) 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.				

Demonstration of acceptability
Acceptability statement: The impact/risk assessment has determined that, given the adopted controls planned discharges (routine and non-routine) are unlikely to result in a potential impact not greater than localised impacts not significant to environmental receptors, and no lasting effect. Further opportunities to reduce the impacts have been investigated above. The adopted controls are considered good survey practice/industry best practice and meet legislative requirements under Marine Orders 91, 95 and 96. Section 6.8.6 demonstrates that the Petroleum Activity is not inconsistent with any recovery plan of threat abatement plan for a listed threatened species of ecological community. Regard has also been given to relevant conservation advice and wildlife conservation plans during the assessment of potential impacts. On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.3.4.2) and Woodside's criteria for demonstrating acceptability (Section 2.4.2), 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, EPSs and MC			
EPOs	***Controls***	***PS***	***MC***
EPO 10 Vessel discharges shall meet requirements defined by Marine Orders and the Woodside chemical assessment and approval process.	C 10.1 Apply Marine Order 95 (Marine pollution prevention – garbage) as appropriate to vessel class.	PS 10.1 Survey vessels compliant with Marine Order 95 – Marine pollution prevention – garbage (as appropriate to vessel class).	MC 10.1 Marine assurance records demonstrate survey vessels are compliant with Marine Order 95 – Marine pollution prevention (as appropriate to vessel class).

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EPOs, EPSs and MC			
EPOs	***Controls***	***PS***	***MC***
	C 10.2 Comply with Marine Order 96 (Marine pollution prevention – sewage) as appropriate to vessel class	PS 10.2 Survey vessels compliant with Marine Order 96 – Marine pollution prevention – sewage (as appropriate to vessel class).	MC 10.2 Marine assurance records demonstrate survey vessels are compliant with Marine Order 96 – Marine pollution prevention – sewage (as appropriate to vessel class).
	C 10.3 Comply with Marine Order 91 (Marine pollution prevention- oil) as relevant to vessel class, which includes mandatory measures for processing oily water before discharge	PS 10.3.1 Survey vessels deck drainage and bilge water discharges will comply with Marine Order 91 (Marine pollution prevention – oil) details expectations on first response and emergency management when a hydrocarbon spill has occurred.	MC 10.3.1 Marine assurance records demonstrate survey vessels comply with Marine Order 91 (Marine pollution prevention – oil) and has in place a current SOPEP (as appropriate to vessel class).
		PS 10.3.2 Machinery space bilge/oily water will be discharged to meet the oil content standard of < 15 ppm without dilution.	MC 10.3.2 Environmental inspection records demonstrate maintained and up-to-date oil discharge records for survey vessels.
	C 10.4 Implement Woodside's Chemical Selection and Assessment Environment Guideline, or equivalent.	PS 10.4 Compliance with Woodside's Chemical Selection and Assessment Environment Guideline (see Section 7.2.1), or equivalent.	MC 10.4 Documentation of chemical selection process indicates conformance to Woodside's Chemical Selection and Assessment Environment Guideline, or equivalent.
	C 10.5 Vessel firefighting system (portable or in-built) to be consistent with Marine Order 15 (Construction—fire protection, fire detection and fire extinction) requirements related to the use and storage of firefighting foams containing perfluoroctane sulfonic acid (PFOS) including: • For vessels constructed on or after 1 January 2026, no use or storage of extinguishing media containing PFOS. • For vessels constructed before 1 January 2026, no use or storage of extinguishing media containing PFOS, beyond the date of first	PS 10.5 Survey vessel firefighting systems consistent with Marine Order 15 requirements related to the use and storage of firefighting foams containing PFOS	MC 10.5 Marine assurance records demonstrate survey vessels firefighting systems are consistent with Marine Order 15 requirements related to the use and storage of firefighting foams containing PFOS

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EPOs, EPSs and MC			
EPOs	***Controls***	***PS***	***MC***
	survey on or after 1 January 2026.		

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6.9 Unplanned activities (accidents, incidents, emergency situations)

6.9.1 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.

6.9.1.1 Worst-case scenarios

In assessing the potential impacts of an unplanned hydrocarbon release, representative worst-case scenarios (in terms of volume and location) were assessed. A summary of the credible hydrocarbon spill scenarios that could occur during the Petroleum Activity are provided in Table 6-10.

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Table 6-10: Credible hydrocarbon spill scenarios

Scenario	Hydrocarbon type	Duration (days)	Max. credible volume (m^3)	Locations
Scenario 1 An instantaneous release due to a vessel collision	Marine Gas Oil	Instantaneous	200	Operational Area Part A at location closest to Sandy islet 14° 1'24.07"S 121°54'40.46"E
				Operational Area Part B at location closest Sandy islet 14°23'45.39"S 121°41'48.81"E

6.9.1.2 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 that exceed selected hydrocarbon threshold concentrations if a credible hydrocarbon spill scenario occurs. 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. The EMBA represents the total extent of all the locations where hydrocarbon thresholds could be exceeded from all modelling runs. Furthermore, 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.

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^2), with entrained and dissolved aromatic hydrocarbon concentrations expressed as parts per billion (ppb).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^2) impacting on the visual amenity of the marine environment. Each of these hydrocarbon thresholds are presented in Table 6-11 and described in the subsections below.

Table 6-11: Summary of thresholds applied to the quantitative hydrocarbon spill risk modelling results

Hydrocarbon type	Ecological hydrocarbon thresholds				Socio-cultural hydrocarbon thresholds	
	Dissolved hydrocarbon (ppb)	Entrained hydrocarbon (ppb)	Surface hydrocarbon (g/m^2)	Accumulated / shoreline hydrocarbon (g/m^2)	Surface hydrocarbon (g/m^2)	Accumulated hydrocarbon (g/m^2)
Marine Gas Oil	10	1,000	10	100	1	10

6.9.1.2.1 Surface hydrocarbon threshold concentrations

The spill modelling outputs defined the EMBA for surface hydrocarbons resulting from a spill (contact on surface waters) using a threshold of ≥10 g/m^2 (dull metallic colours) based on the relationship between film thickness and appearance (Bonn Agreement 2015) Table 6-12). This threshold concentration is used to define an area within which ecological impacts to the marine environment may occur from surface hydrocarbons. It represents the minimum oil thickness (0.01 mm) at which ecological impacts (e.g. to birds and marine mammals) are expected to occur.

Thresholds for registering biological impacts resulting from contact of surface slicks have been estimated by different researchers at about 10–25 g/m^2 (French et al. 1999; Koops et al. 2004; NOAA 1996). Potential impacts of surface slick concentrations in this range for floating hydrocarbons may include harm to seabirds through ingestion from preening of contaminated feathers, or the loss of the thermal protection of their feathers. The 10 g/m^2 threshold is the reported level of oiling to instigate impacts to seabirds and is also

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applied to other wildlife, though it is recognised that 'unfurred' animals, where hydrocarbon adherence is less, may be less vulnerable. 'Oiling' at this threshold is taken to be of a magnitude that can cause a response from the most vulnerable wildlife such as seabirds. Due to weathering processes, surface hydrocarbons will have a lower toxicity due to change in their composition over time. Potential impacts to shoreline sensitive receptors may be markedly reduced in instances where there is extended duration until shoreline contact.

Woodside recognises that hydrocarbons may be present beyond the ecological impact EMBA, at concentrations that may be visible but are not expected to cause ecological impacts. The threshold for visible surface oil (1 g/m²) has therefore been used to define an additional boundary within which socio-cultural impacts to the visual amenity of the marine environment may occur. This area is referred to as the socio-cultural EMBA. Potential impacts to socio-cultural values assessed within these EMBAs include:

- protected areas,
- national and Commonwealth Heritage Listed places,
- tourism and recreation, and
- fisheries.

Table 6-12: The Bonn Agreement oil appearance code

Appearance (following Bonn visibility descriptors)	Mass per area (g/m²)	Thickness (µm)	Volume per area (L/km²)
Discontinuous true oil colours	50 to 200	50 to 200	50,000 to 200,000
Dull metallic colours	5 to 50	5 to 50	5000 to 50,000
Rainbow sheen	0.30 to 5.00	0.30 to 5.00	300 to 5000
Silver sheen	0.04 to 0.30	0.04 to 0.30	40 to 300

6.9.1.2.2 Dissolved hydrocarbon thresholds concentrations

Dissolved hydrocarbons present a narcotic effect resulting from uptake into the tissues of marine organisms. This effect is additive, increasing with exposure concentration or with time of exposure (French-McCay 2002; NRC 2005). The dissolved aromatic threshold of 10 ppb has been selected as a threshold to approximate the potential toxic effects, particularly sublethal effects to sensitive species (French-McCay 2026).

Dissolved hydrocarbons represent the bioavailable fraction of oil in the water column and are therefore the most appropriate metric for assessing potential toxic effects to marine organisms. Toxicity studies consistently demonstrate that adverse biological effects are driven by exposure to dissolved oil components, rather than total oil mass or the physical presence of oil droplets, because only dissolved hydrocarbons can cross biological membranes and interact with target tissues. Acute toxicity datasets and species sensitivity distributions show that the majority of marine species experience no acute effects at dissolved hydrocarbon concentrations at or below 10 ppb, indicating that this concentration is protective of more than 95% of species for acute exposures (French-McCay 2026; Negri et al. 2021; Bejarano et al. 2017).

Experimental and modelling studies demonstrate that toxic effects may begin to occur in the most sensitive species and life stages at dissolved concentrations on the order of 10 ppb, including early biological and sub-lethal responses (French-McCay 2026; Bejarano et al. 2014; McGrath et al. 2018). As such, 10 ppb represents a lower-bound, biologically meaningful exposure value, rather than an arbitrary screening threshold. Use of this concentration is therefore appropriate for identifying ecological features that may be affected by dissolved oil and for assessing potential environmental consequences, while avoiding the implication that widespread or severe toxicity is expected. The 10 ppb dissolved hydrocarbon exposure value thus provides a conservative yet scientifically grounded basis for impact assessment of the dissolved-phase hydrocarbon fate.

As dissolved hydrocarbons are within the water column and not visible, impacts to socio-cultural receptors are expected to be associated with ecological impacts. Therefore, dissolved hydrocarbons at this threshold also represent the level at which socio-cultural impacts may occur. The application of this threshold is conservative as the 10 ppb is an instantaneous value while ecological studies are based on an exposure duration of typically 48 to 96 hours and therefore accounts for uncertainty in consequence from hydrocarbons spills on ecological, social, economic and cultural features of the environment.

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6.9.1.2.3 Entrained hydrocarbon thresholds concentrations

Entrained hydrocarbons in the water column consist of oil droplets containing a mixture of soluble, semi-soluble and insoluble compounds. The toxicologically relevant fraction of entrained oil is limited to the proportion of hydrocarbons that are able to dissolve from droplets into the surrounding water, with multiple experimental and modelling studies demonstrating that toxicity is driven by the dissolved fraction, rather than by droplet mass, and that dissolved hydrocarbons typically represent a small proportion (on the order of ~1%) of fresh oil, with these soluble components lost rapidly as oil weathers (Forth et al. 2017; Redman & Parkerton 2015; French-McCay 2026). Consequently, entrained oil droplets increasingly comprise non-bioavailable material over time, and entrained hydrocarbon concentrations are therefore a poor proxy for toxicity at low concentrations (Forth et al. 2017; Parkerton et al. 2018).

Given this established relationship between oil composition, dissolution processes and weathering, entrained oil concentrations must be substantially higher than dissolved effect thresholds before biologically meaningful exposure is plausible. French-McCay et al. (2018) demonstrate a direct correlation between entrained oil mass and the dissolved fraction derived from it, indicating that entrained concentrations two orders of magnitude greater than dissolved concentrations are required to represent equivalent exposure potential. On this basis, an entrained hydrocarbon exposure value of 1,000 ppb represents a scientifically justified lower-bound threshold for identifying ecological features that may be affected by entrained oil and for assessing potential environmental consequences. This threshold appropriately reflects the limited bioavailability and declining toxicity of entrained oil droplets, while remaining conservative for impact assessment purposes (French-McCay et al. 2018; Negri et al., 2024).

As entrained hydrocarbons are within the water column and not visible, impacts to socio-cultural receptors are expected to be associated with ecological impacts. Therefore, entrained hydrocarbons at this threshold also represent the level at which socio-cultural impacts may occur. The application of this threshold is conservative as the 1,000 ppb is an instantaneous value whereas laboratory-based ecological studies typically assess toxicity over exposure durations of 48 to 96 hours, such that use of an instantaneous exposure value provides a precautionary margin to account for uncertainty in the assessment of potential ecological, social, economic and cultural consequences of hydrocarbon spills.

6.9.1.2.4 Accumulated hydrocarbon threshold concentrations

Owens et al. (1994) define accumulated hydrocarbon <100 g/m² to have an appearance of a stain on shorelines. French-McCay (2009) defines accumulated hydrocarbons ≥100 g/m² to be the threshold that could impact the survival and reproductive capacity of benthic epifaunal invertebrates living in intertidal habitat. A threshold of ≥100 g/m² has been adopted as the threshold for shoreline accumulation and has been included in the EMBA.

As described above Woodside recognises that hydrocarbons may be present beyond the ecological impact EMBA at low concentrations that may be visible but are not expected to cause ecological impacts. The threshold for visible shoreline accumulation (10 g/m²) has therefore been used to define an additional boundary within which socio-cultural impacts to the visual amenity of the marine environment may occur.

6.9.1.3 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 a low exposure values of 1 g/m^2 for surface hydrocarbons, 10 g/m^2 for accumulated hydrocarbons, and 10 ppb for both entrained and dissolved.

An operational 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 any identified pre-emptive baseline areas for the worst-case credible spill scenario or other identified unplanned hydrocarbon releases associated with the operational activities.

6.9.1.4 Hydrocarbon characteristics

Table 6-13 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.

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Table 6-13: Characteristics of the hydrocarbon types used for modelling and ecotoxicological studies

Hydrocarbon Type	Density (g/m3) 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 Gas Oil	0.829	4.00	% of total	6	34.6	54.4	5.0	3.0
			% of aromatics	1.8	1.0	0.2	-	-

6.9.1.4.1 *Marine Gas Oil*

Marine Gas Oil (MGO) is a processed oil that is formulated entirely from the products of distillation (i.e. does not contain residues of distillation that are added to heavier fuel oils. Like all oils, MGO is a complex mixture of multiple hydrocarbon compounds that vary by volatility and solubility. The physical and chemical properties of MGO will determine the way this oil behaves in the marine environment. SIMAP calculations account for the initial density and viscosity of the whole, unweathered, oil mixture as well as the volatility and solubility of component hydrocarbons summarised as pseudo-components. There are multiple grades of MGO that are commercially available, which vary in viscosity and the proportion of longer-chain hydrocarbons (ExxonMobil; online source). The modelling applied specifications from assays of Distillate Marine Fuel Grade A (DMA) MGO (Table 6-13), which is the most common fuel oil used by small to moderate sized vessels in warm water and temperate environments.

MGO is a mixture of both volatile and persistent hydrocarbons. MGO fuels, in general, have relatively low viscosity and density and will consequently spread rapidly as a floating film on calm seas. This spreading will enhance the rate of evaporation of the more volatile components, but evaporation will then slow as the mixture evolves towards higher proportions of the low volatile and non-volatile components.

The residual compounds (BP > 380 °C) will resist evaporation and will require the slower process of degradation (photo and biological) to degrade. The residual mixture will be composed of long chain alkanes, cycloalkanes and other hydrocarbon compounds with complex molecular structures that will be subject to microbial degradation over the longer term (weeks to tens of weeks after release).

The low viscosity of MGO fuels require relatively low wave energy to break up floating slicks and suspend MGO as droplets mixed into the wave-affected layer of the ocean surface. These suspended droplets will be buoyant but will remain in suspension when there is sufficient wave energy. Waves generated by wind speeds as low as 6–7 knots on the open ocean will start to suspend films of floating MGO. Entrainment rates will increase significantly as sea conditions become more energetic. One effect of suspension will be reduction of the evaporation rates of the component hydrocarbons.

In addition to being volatile, the aromatic components, present at a relatively low proportion of the unweathered mixture (~3%) are soluble and may dissolve into the water column from slicks and entrained droplets. Both the solubility and volatility of these compounds vary with the complexity of the hydrocarbon molecules. Around 1.8% of the mixture is contributed by mono-aromatic (MAH) compounds that are both highly volatile and highly soluble and will tend to evaporate rapidly either directly from slicks, or from the water if they first dissolve from the slicks. Semi-volatile (di-aromatic hydrocarbons) and low volatile components (polyaromatic hydrocarbons) contribute around 1.2% of the unweathered mixture will tend to persist in solution if they dissolve.

The mass balance forecast for the constant low-wind case shows rapid initial evaporation, with ~38% lost in the first 12 hours and an additional ~2% in the next 12 hours (Figure 6-6). Evaporation then slows, with ~5% of the remaining mass lost over the following six days. Only a small fraction (~2%) is degraded by microbial and photochemical processes during the first week.

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Predicted weathering of MGO, based on typical conditions in the region indicates ~24 hours after the spill, around 74% of the oil mass is forecast to have entrained and a further 26% is forecast to have evaporated, leaving only a small proportion of the oil floating on the water surface (<1%). The entrained component remained subsurface under the conditions imposed (Figure 6-7). The proportion of the spill volume that entrains will vary with the timing of the release relative to sea conditions. Entrainment would occur more rapidly if the spill occurred when winds exceed more than a moderate breeze (>9–10 m/s), generating breaking waves on the ocean surface.

Given the environmental conditions experienced in the region, MGO is expected to undergo rapid spreading. This, together with evaporative loss, is likely to result in the spill rapidly dissipating. MGO distillates tend not to form emulsions at the temperatures found in the region. The characteristics of the MGO used in the modelling are given in Table 6-13.

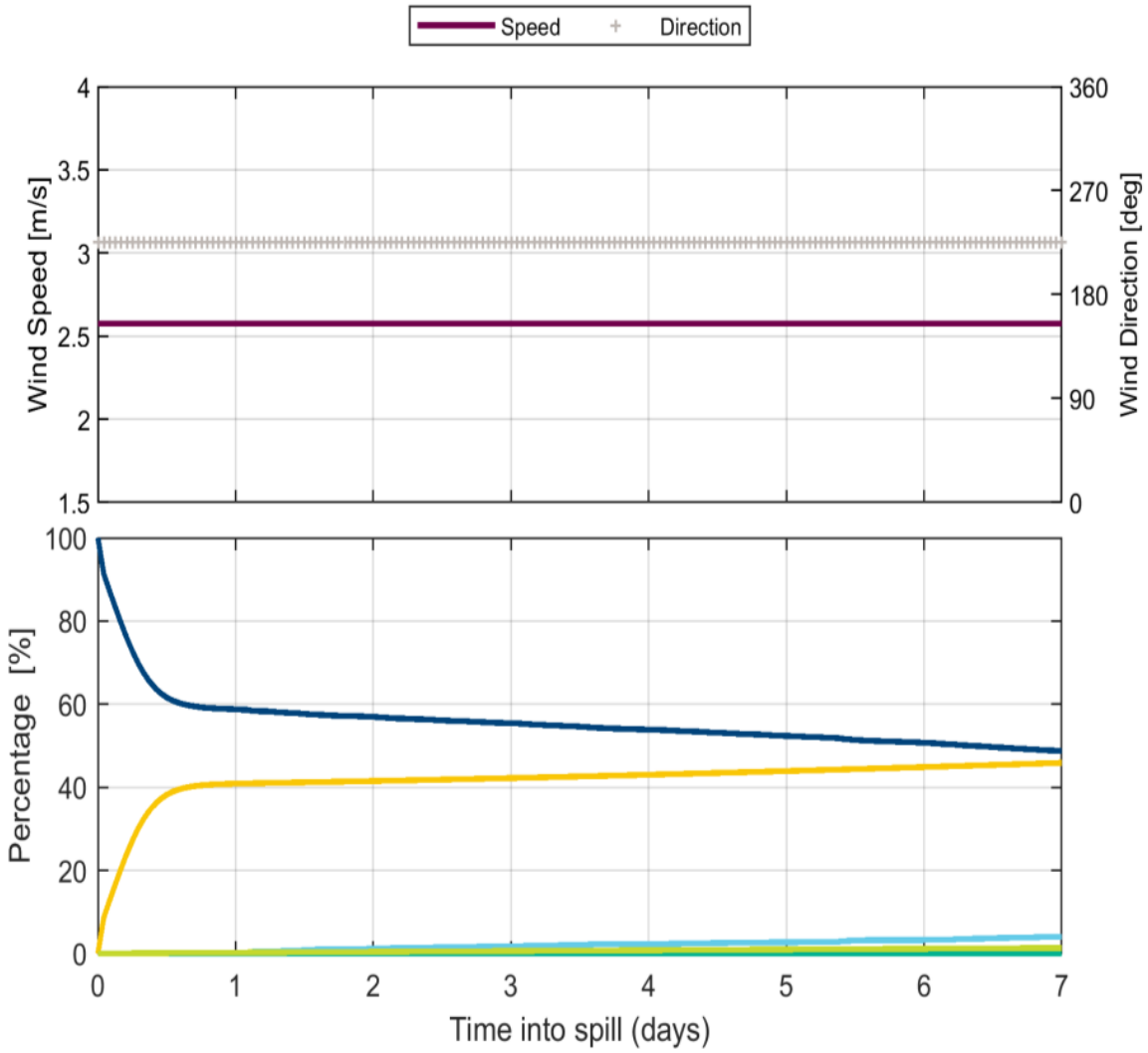


Figure 6-6: Proportional mass balance plot representing weathering of MGO spilled onto the water surface as a one-off instantaneous release of 50 m^3 and subject to a constant 5 kn (2.6 m/s) wind at 27 °C water temperature and 25 °C air temperature

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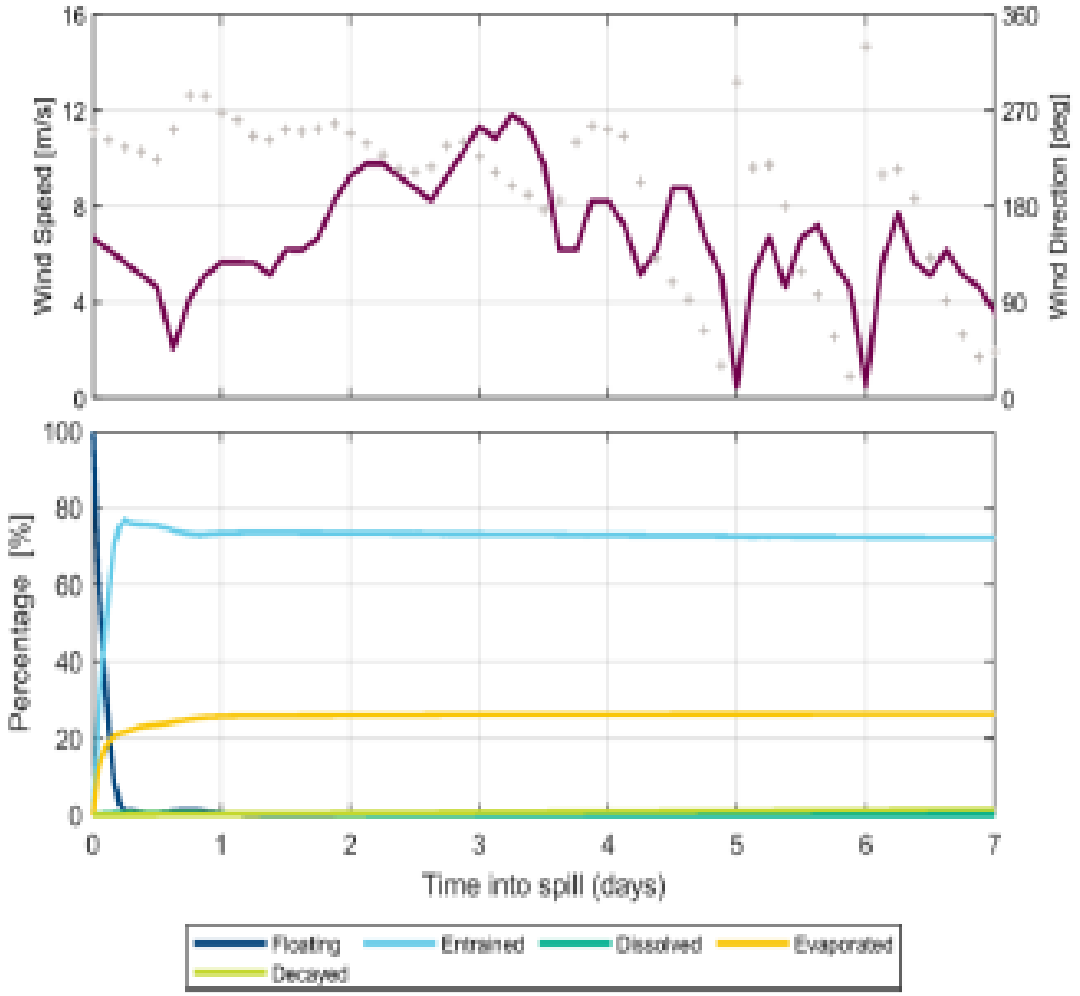


Figure 6-7 Proportional mass balance plot representing the weathering of MGO spilled onto the water surface as a one-off release of 50 m3 and subject to variable wind at 27 °C water temperature and 25 °C air temperature.

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6.9.2 Unplanned hydrocarbon release: Vessel collision

Context		
Survey vessels – Section 3.8	Physical Environment – Section 4.4 Habitats and Biological Communities – Section 4.5 Protected Species – Section 4.6 Key Ecological Features – Section 4.7 Protected Places – Section 4.8 Socio-economic environment – Section 4.9	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 to marine environment due to a vessel collision	X	X		X	X	X	A	B	1. Highly Unlikely	M	LC S GP PJ	Acceptable if ALARP	EPO 2 EPO 11

Description of source of impact

Background

The Petroleum Activity will involve primarily one survey vessel undertaking each activity, though allowance for two survey vessels in the Operational Area at any one time is provided.

The worst case credible hydrocarbon release would be breach of the survey vessel's largest fuel tank through collision with a third-party vessel.

The specific survey vessels are unknown at this stage of the activity. The typical upper limit for individual tank volume for the different vessel types based on a review of vessels available to complete the work are as follows:

- Geotechnical Drilling Vessel = 185 m^3
- Multipurpose (Geophysical and Light Geotechnical) Vessel = 120 m^3
- Remote (Uncrewed) Vessel = 75 m^3 (total fuel capacity)

A worst-case loss of volume of 200 m^3 of MGO is therefore considered an appropriate conservative worst case for rupture of the single largest fuel tank for any of the survey vessel types

Industry experience

Registered vessels or foreign flag vessels in Australian waters are required to report events to the Australian Transport Safety Bureau, AMSA or Australian Search and Rescue.

From a review of the Australian Transport Safety Bureau marine safety and investigation reports, one vessel collision occurred in 2011–2012 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 collision involved a vessel under pilot control in a port colliding with a vessel alongside a wharf, causing it to sink. No reported pollution resulted from the sunken vessel.

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These incidents demonstrate the likelihood of only minor volumes of hydrocarbons being released during the event of a vessel collision.

From 2010–2011, the Australian Transport Safety Bureau'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 communication and 42% related to poor monitoring, checking and documentation. Most of these related to the grounding instances.

Credible scenarios

For a vessel collision to result in the worst-case scenario of a hydrocarbon spill potentially impacting an environmental receptor, several factors must align:

- 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 have a volume higher than the point of penetration.
- The probability of the chain of events described above aligning, to result in a breach of fuel tanks resulting in a spill that could potentially affect the marine environment, is considered highly unlikely.

The environmental risk analysis identified one credible potential scenario 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 (refer to Table 6-14). A collision between the survey vessel and a third party vessel (i.e. commercial shipping, other petroleum related vessels and commercial fishing vessels) was assessed as being credible, but highly unlikely given the standard vessel operations and equipment in place to prevent collision at sea, and the short duration of the activities.

A loss of containment from vessel grounding was not considered credible.

Table 6-14: Details of identified hydrocarbon spill scenarios

Scenario	Likelihood	Credible	Volume (m^3)	Justification
Collision with third-party vessel resulting in breach of the survey vessel's hull	Highly unlikely	Credible	<200	Third-party vessels in the survey vicinity may be commercial shipping vessels which will be notified, by Notices to Mariners through AMSA, of the survey activity in the area. All third-party vessels operating in the vicinity will be tracked on radar and alerted (as required) to the presence of the survey vessel operations and therefore collision resulting in breach of the survey vessel's hull is considered highly unlikely

Quantitative hydrocarbon risk assessment

Woodside has commissioned quantitative hydrocarbon spill modelling of two vessel collision scenarios at two different locations as detailed in Table 6-15. The volumes selected for modelling are based on the potential vessels that may be used and represent an instantaneous release.

Table 6-15: Details of identified marine diesel spill scenarios modelled in vicinity of Operational Area

Location	Coordinates	Volume (m^3)	Justification
Operational Area Part A: Torosa	14° 01′ 24.07″S 121° 54′ 40.46″E	200	Closest point to Sandy Islet in Operational Area Part A
Operational Area Part B: Brecknock Calliance	14°23'45.39"S 121°41'48.81"E	200	Closest point to Sandy Islet in Operational Area Part B

The modelling assessed the extent of a marine diesel spill volume of 200 m^3 for all seasons, using an historic sample of wind and current data for the region. The modelling was conducted by RPS using a three-dimensional hydrocarbon spill trajectory and weathering model (SIMAP, Spill Impact Mapping and Analysis Program) (RPS 2026).

Impact assessment

Environmental value(s) potentially impacted

Environment that may be affected

An EMBA has been drawn that encompasses the EMBA for both spill locations

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The overall EMBA for the Petroleum Activity is based on stochastic modelling, which compiles data from 200 hypothetical worst-case spills under various weather and metocean conditions (as described in Section 6.9.1). Spill modelling was undertaken based on an instantaneous surface release of 200 m³ of marine diesel at different locations.

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. The worst case results for both scenarios are summarised below with results for each receptor presented in Table 6-16; in all cases, the spill from Operational Area Part A results in the worst-case probabilities and concentrations.

Surface hydrocarbons

The highest probability of contact for films ≥1 g/m^2 was calculated at 100% for Scott Reef North, with 4.5%, 7.5% and 26% at Seringapatam Reef, Sandy Islet and Scott Reef South respectively. Probability of contact for films ≥10 g/m^2 was calculated at the highest of 100% for Scott Reef North, while Scott Reef South is calculated at the 16.5% and 1.5% for Sandy Islet, all other locations were no contact. Probability of contact for films ≥50 g/m^2 was calculated at the highest of 100% for Scott Reef North, while Scott Reef North is calculated at the 8%, all other locations were no contact.

The probabilities and concentrations presented above for Operational Area Part A are all higher than those from a spill in Operational Area Part B, therefore these are presented in Table 6-16.

Floating oil at 10 g/m² present in open waters up to 51 km from spill location in Operational Area Part A, but up to 73 km from the spill location in Operational Area Part B.

Entrained hydrocarbons

The furthest extent of entrained oil concentrations ≥10 ppb is calculated to drift up to 569 km from the spill site. The furthest distance calculated for entrained oil ≥100 ppb and 1,000 ppb is 266 km and 50 km, respectively. The highest probability of contact for entrained oil ≥10 ppb is at 50% for Scott Reef North, 45% for Scott Reef South and 33.5% at Sandy Islet. At concentrations >100 ppb, the probabilities drop to 34% for Scott Reef North, 31% for Scott Reef South and 15% at Sandy Islet, and at 1,000 ppb, they drop to 15%, 10.5% and 1.5%. Seringapatam Reef has a low probability of 24.5% at >10 ppb, and 7% at >100 ppb.

The probabilities and concentrations presented above for Operational Area Part A are all higher than those from a spill in Operational Area Part B, therefore these are presented in Table 6-16.

The maximum entrained oil concentration forecast for any receptor is predicted to be 23,377 ppb at Scott Reef North and 23,260 ppb at Scott Reef South.

Dissolved hydrocarbons

The aromatic hydrocarbon concentrations ≥10 ppb and 50 ppb were calculated to potentially occur up to 168 km and 20 km from the spill site, respectively. The highest probability of contact by dissolved hydrocarbon is predicted for Scott Reef North, where concentrations above 10 ppb were predicted with 9% probability. A lower probability 0.5% and 1.5% were calculated for Scott Reef North and Scott Reef South, respectively. At >50 ppb, these probabilities drop to 1.5% for Scott Reef North and <1% for Scott Reef South.

The maximum dissolved aromatic hydrocarbon concentration was predicted at Scott Reef North at 191 ppb.

Accumulated hydrocarbons

For a spill in Operational Area Part A, the potential for accumulation of oil to concentrations ≥10 g/m^2 was calculated at 8% for Sandy Islet, and 1% for Scott Reef North and South. The worst-case accumulated concentration calculated for shoreline location was 3,599 g/m^2, at Sandy Islet, Scott Reef North Reef (NR) and Scott Reef South. These receptors were also calculated to have the worst-case accumulated volume to be 80 m^3. The probabilities and concentrations presented above for Operational Area Part A are all higher than those from a spill in Operational Area Part B, therefore these are presented in Table 6-16.

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Table 6-16: EMBA – Key receptor locations and sensitivities potentially contacted above impact thresholds by a spill of MGO due to a vessel collision, with summary hydrocarbon spill contact

Environmental Setting	Receptor	Environmental, Social, Cultural, Heritage and Economic Aspects presented as per the Environmental Risk Definition (Woodside's Risk Management Procedure)																																Probability of hydrocarbon contact and fate (%)					
		Physical		*Biological*																					*Socio-economic and Cultural*					*Socio-cultural hydrocarbon thresholds*		*Ecological hydrocarbon thresholds*			
		Water Quality	*Marine Sediment*	*Marine Primary Producers*			*Other Communities / Habitats*							*Protected Species*									*Other Species*																
		Open water – (pristine)	*Marine Sediment – (pristine)*	*Coral reef*	*Seagrass beds / Macroalgae*	*Mangroves*	*Spawning / nursery areas*	*Open water – Productivity / upwelling*	*Non-biogenic reefs*	*Offshore filter feeders and/or deepwater benthic communities*	*Nearshore filter feeders*	*Sandy shores*	*Estuaries / tributaries / creeks / lagoons (including mudflats)*	*Rocky shores*	*Cetaceans – migratory whales*	*Cetaceans – dolphins and porpoises*	*Dugongs*	*Pinnipeds (sea lions and fur seals)*	*Marine turtles (foraging and internesting areas and significant nesting beaches)*	*Sea snakes*	*Whale sharks*	*Sharks and rays*	*Seabirds and/or migratory shorebirds*	*Pelagic fish populations*	*Resident / Demersal Fish*	*Fisheries – commercial*	*Fisheries – traditional*	*Tourism and Recreation*	*Protected Areas / Heritage – European and Indigenous / Underwater Cultural Heritage*	*Offshore Oil and Gas Infrastructure (topside and subsea)*	*Accumulated hydrocarbon (≥10 g/m²)*	*Surface hydrocarbon (≥1 g/m²)*	*Surface hydrocarbon (≥10 g/m²)*	*Entrained hydrocarbon (≥1000 ppb)*	*Dissolved hydrocarbon (≥10 ppb)*	*Accumulated hydrocarbons (≥100 g/m²)*
Nature Reserve	Scott Reef Nature Reserve	✓	✓	✓	✓		✓	✓		✓		✓			✓	✓			✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		*6.5*	*5.5*	*2.5*	*3.5*	*3*	*3.5*
Islands and reefs	Scott Reef North	✓	✓	✓	✓		✓	✓		✓		✓			✓	✓			✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		*N/A*	*100*	*100*	*15*	*9*	*N/A*
	Scott Reef South	✓	✓	✓	✓		✓	✓		✓		✓			✓	✓			✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		*6.5*	*26*	*16.5*	*10.5*	*5.5*	*3.5*
	Sandy Islet	✓	✓	✓	✓		✓	✓		✓		✓			✓	✓			✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		*6.5*	*7.5*	*1.5*	*1.5*	*1.5*	*3.5*
	Seringapatam Reef*	✓	✓	✓	✓		✓	✓		✓		✓				✓			✓	✓		✓	✓	✓	✓		✓	✓	✓		*N/A*	*4.5*	*NC*	*NC*	*NC*	*N/A*

✓ Sensitivity potentially contacted above impact thresholds

** Floating oil will not accumulate on submerged features and at open ocean locations.*

NC: No contact to receptor predicted for specified threshold.

N/A: Not applicable

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Summary of potential impacts to protected species, other habitats and communities, water quality and socio-economic values

The potential impacts of spilled hydrocarbons to species (protected and otherwise), marine primary producers, other habitats and communities, water quality, marine sediment quality, air quality, protected areas and socio-economic values are described below. It is noted that the toxic components in marine diesel include alkylated naphthalenes which can be rapidly accumulated by marine biota including invertebrates such as marine oysters, clams, shrimp, as well as a range of vertebrates, such as finfish. Marine diesel also contains additives that contribute to its toxicity.

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.

Protected species – marine mammals

Marine mammals that have direct physical contact with surface, entrained or dissolved aromatic hydrocarbons may suffer surface fouling or ingestion of hydrocarbons and inhalation of toxic vapours. 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 or neurological damage (Helm et al. 2015). If prey (fish and plankton) are contaminated, this can result in the absorption of toxic components of the hydrocarbons (polycyclic aromatic hydrocarbons). In a review of cetacean observations in relation to a number of large-scale hydrocarbon spills, Geraci (1988) found little evidence of mortality associated with hydrocarbon spills; however, behavioural disturbance (i.e. avoiding spilled hydrocarbons) was observed in some instances for several species of cetacean. This suggests that cetaceans have the ability to detect and avoid surface slicks.

Cetaceans that may interact with spilled hydrocarbons are most likely to be subject to physical impacts. Given cetaceans maintain thick skin and blubber, external exposure to hydrocarbons may result in irritation to skin and eyes. Entrained hydrocarbons may also be ingested, particularly by baleen whales which feed by filtering large volumes of water.

As identified in Section 4.6, protected species including migrating blue whales and humpback whales may be encountered near the Operational Area, and therefore could be impacted 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. Potential impacts may include behavioural impacts (e.g. avoidance of impacted areas), sub-lethal biological effects (e.g. skin irritation, irritation from ingestion or inhalation, reproductive failure) and, in rare circumstances, organ or neurological damage leading to death. 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. Impacts on the overall population viability of cetaceans are not predicted.

Protected species – marine turtles

Adult sea turtles exhibit no avoidance behaviour when they encounter hydrocarbon spills (NOAA 2010). Contact with entrained (or floating) hydrocarbon can 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 (NOAA 2010). Oiling can also irritate and injure skin which is most evident on pliable areas such as the neck and flippers (Lutcavage et al. 1995). A stress response associated with this exposure pathway includes an increase in the production of white blood cells, and even a short exposure to hydrocarbons may affect the functioning of their salt gland (Lutcavage et al. 1995).

Hydrocarbons in surface waters may 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 (NOAA 2010). Contact with entrained hydrocarbons can 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 (Gagnon and Rawson 2010). Given the hydrocarbon is expected to weather rapidly when released to the environment, relatively fresh entrained hydrocarbons (which are typically relatively close to the release location) are considered to have the greatest potential for impact.

The EMBA overlaps with habitat critical to the survival of green turtles for nesting and a variety of BIAs identified in Section 4.6.2 including reproduction for both Green and Hawksbill turtles at Scott Reef where shoreline accumulation could occur in the event of a spill. These areas are recognised as habitat critical for the survival of marine turtles under the Recovery Plan for Marine Turtles in Australia (Commonwealth of Australia, 2017) and support significant breeding and nesting activity throughout the region. The Operational Area is unlikely to represent important habitat for marine turtles, given the absence of potential nesting or foraging habitat (i.e. no emergent islands, reef habitat or shallow shoals) and the water depth (deeper than 350 m).In the event of a worst-case vessel spill of marine diesel oil, there is a potential that surface and entrained hydrocarbons exceeding impact threshold concentrations (10 g/m² and 1,000 ppb respectively) will be present in offshore waters extending up to 73 km and 65 km respectively, with accumulation at Scott Reef and Sandy Islet, 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

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equal to or greater than the 10 ppb threshold are predicted to extend 168 km from 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.

Sea snakes

Impacts to sea snakes 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. The dusky sea snake (Aipysurus fuscus) (endangered), short-nosed sea snake (*Aipysurus apraefrontalis)* (critically endangered) and leaf scaled sea snake (*Aipysurus foliosquama*) (critically endangered)*,* have been identified as having the potential to occur in the EMBA.

Stochastic spill modelling indicates that some sea snake habitats may be exposed to surface hydrocarbons (≥10 g/m²) entrained hydrocarbons (≥1000 ppb) and dissolved aromatic hydrocarbons (≥10 ppb).Therefore, a marine diesel spill may have a minor disruption to a portion of the population but there is no threat to overall population viability.

Protected species – birds

Seabirds and migratory birds are particularly vulnerable to contact with floating hydrocarbons, which may mat feathers. This may lead to hypothermia from loss of insulation and ingestion of hydrocarbons when preening to remove hydrocarbons; both impacts may result in mortality (Hassan and Javed 2011). The modelled scenario results in localised floating hydrocarbons below impact thresholds centred around the release location; hence, the potential for seabird exposure to floating hydrocarbons is considered to be low. Migratory shorebirds are unlikely to interact with spilled hydrocarbons; refer to the sections on Islands and Mainland Coast below for a discussion on the potential impacts to migratory shorebirds.

Ashmore Reef is recognised as an important breeding area for foraging seabirds and migratory shorebirds and there are a number of BIAs for seabirds that overlap with a small proportion of the EMBA, as provided in Section 4.6.4. Scott Reef also provides resting habitat BIA for the little tern. Offshore waters are potential foraging grounds for seabirds associated with the coastal roosting and nesting habitat, which includes the numerous islands along the Kimberley coast. 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. Impacts may include mortality due to oiling of feathers or the ingestion of hydrocarbons.

Seabirds generally do not exhibit avoidance behaviour to floating hydrocarbons; exposure may occur through immersion, ingestion or inhalation. Contact with hydrocarbons can result in plumage fouling, hypothermia, reduced buoyancy, impaired flight and feeding ability, and irritation of mucous membranes, with potential for mortality (AMSA, 2013; International Petroleum Industry Conservation Association, 2004). Longer-term impacts may include developmental abnormalities in chicks and reduced reproductive success. The proximity of foraging BIAs suggests individual birds may be exposed during offshore feeding. However, given the localised nature of the spill and the limited spatial extent of surface hydrocarbons, impacts are highly unlikely to result in a potential consequence greater than minor and unlikely to affect population viability at the regional scale.

Protected species – Fish, 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. Impacts to sharks and rays may occur through direct contact with hydrocarbons and contaminate the tissues and internal organs either through direct contact or via the food chain (consumption of prey). As gill breathing organisms, sharks and rays may be vulnerable to toxic effects of dissolved hydrocarbons (entering the body via the gills) and entrained hydrocarbons (coating of the gills inhibiting gas exchange). In the offshore environment, it is probable that pelagic shark species are able to detect and avoid surface waters underneath hydrocarbon spills by swimming into deeper water or away from the affected areas. Therefore, any impact on sharks and rays is predicted to be minor and localised.

Hydrocarbon contact may affect whale sharks through ingestion (entrained/dissolved hydrocarbons), particularly if feeding. Whale sharks may transit offshore waters when migrating to and from Ningaloo Reef, where they aggregate for feeding from March to July. While it is possible whale sharks may traverse the vicinity of the Operational Area, their presence would be of a relatively short duration and not in significant numbers, given the main aggregations are recorded in coastal waters, particularly the Ningaloo Reef edge (Department of Parks and Wildlife, 2013; Marine Parks and Reserves Authority, 2005). In addition, tagging studies indicate broad dispersal across the Timor Sea (Meekan & Radford, 2010), suggesting only a portion of the population would be within the area above the adverse exposure threshold at any one time, and any impacts are expected to be minor and limited to individual animals.

Should sharks or fish 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 20–30 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.

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Rays, including reef manta (*Mobula alfredi*) and giant manta (*M. birostris*), are also listed as migratory and are known to occur within the EMBA. These species may be exposed to hydrocarbons through dermal contact or ingestion during filter feeding. Sawfish species, including narrow sawfish (*Anoxypristis cuspidata*), are listed as vulnerable and migratory, and may occur within the Operational Area and EMBA. While these benthic species may be considered sensitive to sediment contamination, sediment quality is not expected to be significantly affected by a surface marine diesel release. Given the deep-water depths of the Operational Area (>350 m), surface, entrained and dissolved hydrocarbons are confined to the upper layers of the water column and are not predicted to reach or accumulate in benthic sediments. Therefore, impacts to sawfish are expected to be limited to potential water column exposure and are predicted to be minor and temporary. 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.

Benthic habitats

Benthic habitats within the Operational Area are primarily Benthic habitats within the Operational Area are primarily composed of unconsolidated soft sediments, including well sorted medium to coarse sands with low total organic carbon content. These sediments are typical of the outer NWMR and support sparse assemblages of filter-feeding and deposit-feeding organisms. The deepwater habitats surrounding the Scott Reef system overlying the Torosa Field generally comprise soft sediment seabed areas with sparse benthic biota. Benthic habitat characteristics are described in Secton 4.5. While these communities may be sensitive to hydrocarbon exposure, spill modelling indicates surface, entrained and dissolved hydrocarbons are confined to the upper layers of the water column and are not predicted to reach the seabed, particularly given the deep water depths (>350m) of the Operational Area.

Planton 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. Communities are expected to recover quickly (weeks/months) due to high population turnover (International Tanker Owners Pollution Federation [ITOPF] 2011a). It is therefore considered that any potential impacts would 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 20–30 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 low magnitude and temporary.

Offshore reefs and islands

Offshore reefs and islands within the EMBA, including Scott Reef and Sandy Islet, may be exposed to hydrocarbons above ecological impact thresholds in the event of a worst-case spill scenario (Table 6-16). These locations support sensitive benthic and intertidal communities, including coral reef systems, macroalgae and associated invertebrate fauna.

Potential impacts to reef-associated biota include physical coating of coral and algal surfaces, which may inhibit photosynthesis and gas exchange, leading to reduced growth or mortality. Sessile organisms such as sponges and soft corals may be affected by dissolved and entrained hydrocarbons through dermal absorption or clogging of feeding structures. Protected species inhabiting these reef systems may also be at risk, particularly if hydrocarbons interfere with feeding or reproductive processes. However, given the limited spatial extent and short duration of hydrocarbon exposure predicted by modelling, and the resilience of many reef communities, it is highly unlikely to result in population-level effect.

Key Ecological Features

KEFs potentially impacted by a marine diesel spill from a vessel collision event within the EMBA include:

- Continental Slope Demersal Fish Communities (overlaps Operational Area Part B)
- Seringapatam Reef and Commonwealth waters in the Scott Reef Complex (overlaps Operational Area Part A)
- Ancient coastline at 125 m depth contour
- Ashmore Reef and Cartier Island and surrounding Commonwealth waters

These KEFs are defined by geomorphological features or their ecological significance, including enhanced biological productivity, habitat complexity, and support for demersal fish and benthic communities. Although no interactions with the seabed are likely to occur from a diesel spill, the consequences of a marine diesel spill may include short-term impacts to demersal fish populations and biodiversity associated with some of these KEFs, particularly within surface water layers.

Given the broad spatial extent of most KEFs and the limited duration and footprint of hydrocarbon exposure, it is highly unlikely impacts would result in a potential consequence greater than minor. The greatest potential for ecological effects is predicted to occur closest to the release location, with no long-term or population-level impacts

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Water quality

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.

Protected areas

Surface and entrained hydrocarbons at or exceeding impact thresholds have a very low probability (2.5 and 3.5% respectively) of contacting the Scott Reef NR (no contact exceeding the impact thresholds for dissolved. Surface and entrained hydrocarbons are mostly only predicted within the deep open waters of these protected areas, with 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.

Commercial Fisheries

Fish exposure to hydrocarbons 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 depends upon the magnitude of the hydrocarbon contamination. Fish have a high capacity to metabolise these hydrocarbons while crustaceans (such as prawns) have a reduced ability (Yender, et al., 2002). Seafood safety is a major concern associated with spill incidents. Therefore, actual or potential contamination of seafood can affect commercial and recreational fishing and can impact seafood markets long after any actual risk to seafood from a spill has subsided (Yender, et al., 2002). A 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 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.

A loss of marine diesel spill from a vessel collision 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 >60–200 m depth, or pelagic species which are highly mobile. Therefore, 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 ≥1 g/m² may also occur up to 243 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. There is the potential that a fishing exclusion zone would be applied in the area of the spill, which would put a temporary ban on fishing activities and therefore potentially lead to subsequent economic impacts on commercial fishing operators if they were planning to fish within the area of the spill. 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.

Traditional and customary fishing

Traditional fishing was allowed within the 12 mile fishing zones that existed around a number of reefs or islets including Scott Reef, which is currently the principal reef to which Indonesian fishers regularly sail on a seasonal basis to harvest trepang and other reef species. Therefore a spill could result in an exclusion area to traditional fishers on a temporary basis.

Tourism and recreational activities

The Operational Area is considered too far offshore for significant recreational fishing or tourism activities. However, some tourism activities may occur at Scott Reef. These activities are expected to be exclusively nature-based tourism; impacts to the environmental values associated with these islands and reefs may impact upon tourism activities. Refer to 'Offshore reefs and islands' for discussion on the potential impacts to these receptors.

Impacts to tourism activities are expected to be minor based on the likelihood and nature of contact to environmental values that support tourism activities. Impacts to these values may result in displacement of tourism activity, and potentially minor loss of revenue for tourist operators (e.g. charter fishing cancellations due to fishery closures).

Commercial shipping, offshore oil and gas and defence

There are no shipping fairways, offshore oil and gas activities or defence activities in the Operational Area or EMBA. In the event of a spill, avoidance of surface hydrocarbons is a possible response by other vessels that may be transiting through the region. However, such occurrences will likely be limited to proximity to the release site, and other oil and gas activities are unlikely to be impacted.

Cultural features and heritage values

Refer to Section 6.11 for an assessment of potential impacts to cultural features and heritage values from the Petroleum Activity. Related control measures demonstrate that impacts are reduced to ALARP and are of an acceptable level have been captured in Section 6.11 below.

Summary of potential impacts to environmental values

In the event of an unplanned hydrocarbon release to the marine environment due to vessel collision, it is considered that any potential impact would be localised and temporary in nature to water quality (in comparison to background

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levels and/or international standards) with localised and temporary impacts to habitats, populations and fishing concerns.

The greatest environmental consequence identified when assessing an unplanned hydrocarbon release to the marine environment due to vessel collision, is defined as B, which equates to 'Major impact on environmental feature(s) or area(s), such as impact on feature or area of national importance with limited ability to recover'.

Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[34]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
Legislation, codes and standards				
Comply with Marine Order 30 (Prevention of collisions) 2016, including: • adherence to steering and sailing rules including maintaining lookouts (e.g. visual, hearing, radar), proceeding at safe speeds, assessing risk of collision and taking action to avoid collision (monitoring radar) • adherence to navigation light display requirements, including visibility, light position/shape appropriate to activity • adherence to navigation noise signals as required.	F: Yes. CS: Minimal cost. Standard practice.	Legislative requirements to be followed reduce the likelihood of interference with other marine users resulting in a collision.	Controls based on legislative requirements – must be adopted.	Yes C 11.4
Comply with Marine Order 27 (Safety of navigation and radio equipment), as applicable to vessel class	F: Yes. CS: Minimal cost. Standard practice.	Legislative requirements to be followed reduce the likelihood of interfering with other marine users and resulting in a collision.	Controls based on legislative requirements – must be adopted.	Yes C 11.5
Comply with Marine Order 21 (Safety and emergency arrangements), as applicable to vessel class	F: Yes. CS: Minimal cost. Standard practice.	Legislative requirements to be followed reduce the likelihood of interfering with other marine users and resulting in a collision.	Controls based on legislative requirements – must be adopted.	Yes C 11.6
Establish a 500m temporary safety exclusion zone (SEZ) around the survey vessel.	F. Yes. CS: Minimal cost. Standard practice.	Presence of the SEZ will reduce the likelihood of interfering with other marine users.	Benefits outweigh cost/sacrifice. Control is also standard practice.	Yes C 1.2

[34] *Qualitative measure*

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Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[34]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
Comply with Marine Order 91 (Marine Pollution prevention – oil) as relevant to vessel class, which includes mandatory measures for processing oily water before discharge	F: Yes. CS: Minimal cost. Standard practice.	Legislative requirements to be followed reduce the likelihood of an unplanned release including vessel maintenance requirements. The consequence is unchanged.	Controls based on legislative requirements – must be adopted.	Yes C 10.3
In the event of a spill, implement emergency response activities in accordance with the OPEP (Appendix H).	F: Yes. CS: Minimal Cost. Standard practice.	Implementing the oil pollution response control measures will reduce the consequence of impacts resulting from hydrocarbon discharges to the environment. No change to likelihood.	Controls based on legislative requirements – must be adopted.	Yes C 11.2
Arrangements supporting the activities in the OPEP will be tested to ensure the OPEP can be implemented as planned.	F: Yes. CS: Moderate costs associated with exercises. Standard practice.	No change to impact or risk however ensures OSCP can be implemented in the event of a hydrocarbon spill thereby potentially reducing the consequence.	Controls based on legislative requirement – must be adopted.	Yes C 11.3
Good practice				
Develop a CONOPS/ SIMOPS Plan to manage interactions with other facilities/vessels, where applicable. The CONOPS/ SIMOPS Plan will contain information on: • minimum separation distances • communications • vessels/activities involved in CONOPS/ SIMOPS • exclusion zone entry and exit processes • key roles, responsibilities and emergency contacts.	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 C 1.8
AHO will be notified of activities no less than four weeks prior to the commencement of the first activity, and then subsequently when vessels are undertaking	F: Yes. CS: Minimal cost. Standard practice.	Notifying AHO, Pilbara Ports Authority and DoT will enable them to update maritime charts and notify other mariners of survey activities, thereby	Benefits outweigh cost/sacrifice. Control is also standard practice and notification was requested during	Yes C 1.3

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Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[34]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
activities within the Operational Area for more than three weeks at a time		reducing the likelihood of a collision with a third-party vessel.	consultation (Appendix F).	
Notify AMSA's Joint Rescue Coordination Centre (JRCC) of activities where vessels will be in the Operational Area >3 weeks, 24–48 hours before activities commence.	F: Yes. CS: Minimal cost. Standard practice.	Communicating the Petroleum Activity to other marine users ensures they are informed and aware should emergency response be required.	Benefits outweigh cost/sacrifice. Control is also standard practice and notification was requested during consultation (Appendix F).	Yes C 1.4
Apply the Woodside Marine Offshore Assurance Procedure to all survey vessels. The procedure details requirements for all vessels, including: • operation in sufficient water depth • operation by qualified navigators/masters • use of most recent marine charts	F: Yes. CS: Minimal cost. Standard practice.	Assurance activities outlined in procedure will reduce the likelihood of a vessel collision or vessel grounding event.	Control based on internal company requirements – must be adopted.	Yes C 11.1
Consultation undertaken in support of the Petroleum Activity, so that marine users are informed and aware.	F: Yes. CS: Minimal cost. Standard practice.	Consultation ensures marine users, including those associated with the activities of adjacent titleholders, are informed and aware.	Benefits outweigh cost/sacrifice.	Yes C 1.10
Notify relevant government departments, fishing industry representative bodies and licence holders of activities prior to the commencement and following completion of activities.	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 interference with other marine users.	Benefits outweigh cost/sacrifice. Control is also standard practice.	Yes C 1.5
Survey vessels will have an Indonesian language communication sheet onboard which will include key activity details (such as the timing and location information) to provide to any Indonesian fishers encountered during the activity.	F: Yes. CS: Minimal cost.		Benefits outweigh cost/sacrifice.	Yes C 1.6
Where safe and practicable to do so, Indonesian fishers will be	F: Yes. CS: Minimal cost.		Benefits outweigh cost/sacrifice.	Yes C 1.7

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Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[34]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
provided with visibility aids, such as reflectors, lights or equivalent devices, for use during night-time operations.				
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 were identified.				
Professional judgement – Engineered Solution				
Reduce the volumes of hydrocarbons stored onboard the vessel.	F: Yes. CS: Volumes of required hydrocarbons 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 survey 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
Risk-based analysis				
N/A				
Company values				
N/A				
Company values				
N/A				
ALARP statement: On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.3.4.2) and Woodside's criteria for demonstrating ALARP (Section 2.4.1), Woodside considers the adopted controls appropriate to manage potential impacts/risks associated with an unplanned hydrocarbon release from a 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
Acceptability statement: The impact/risk assessment has determined that, given the adopted controls, an unplanned hydrocarbon release from a vessel collision may result in a major impact on a sensitive feature/s or receiving environment with limited ability to recover. On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.3.4.2) and Woodside's criteria for demonstrating acceptability (Section 2.4.2), Woodside considers

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Demonstration of acceptability
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. The impact assessment has determined that an unplanned loss of hydrocarbon as a result of a vessel collision represents a low current risk rating that is unlikely to result in potential impact greater than localised, minor and temporary disruption to a small proportion of the population, and no impact on critical habitat or activity. Further opportunities to reduce the impacts and risks have been investigated above. The adopted controls are consistent with the most relevant regulatory guidelines and good survey practice/industry best practice. On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.3.4.2) and Woodside's criteria for demonstrating acceptability (Section 2.4.2), Woodside considers risks to be managed to a level that is broadly acceptable.

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EPOs, EPSs and MC			
EPO	***Controls***	***PS***	***MC***
EPO 11 No release of hydrocarbons to the marine environment due to a vessel collision associated with the activity	C 11.1 Apply the Woodside Marine Offshore Assurance Procedure to all survey vessels. The procedure which details requirements for all vessels, including: • operation in sufficient water depth • operation by qualified navigators/masters • use of most recent marine charts.	PS 11.1 Woodside Vessel Marine Assurance Process conducted before contracting vessel, to ensure suitability and compliance with procedure requirements and suitable emergency preparedness verification.	MC 11.1 Marine assurance records demonstrate compliance.
	C 11.2 In the event of a spill, implement emergency response activities in accordance with the OPEP (Appendix H).	PS 11.2 In the event of a spill, the OPEP requirements are implemented.	MC 11.2 Records of completed incident documentation
	C 11.3 Arrangements supporting the activities in the OPEP will be tested to ensure the OPEP can be implemented as planned.	PS 11.3.1 Exercises and /tests will be conducted in alignment with the frequency identified in Table 7-10.	MC 11.3.1 Testing of arrangement records confirm emergency response capability has been maintained.
		PS 11.3.2 Testing of arrangement records confirm that emergency response capability has been maintained.	MC 11.3.2 Crisis and Emergency Management Dashboard confirms that minimum level of personnel trained for core OPEP roles are available.
	C 11.4 Comply with Marine Order 30 (Prevention of collisions) as applicable to vessel class	PS 11.4 Survey vessels compliant with Marine Order 30 (Prevention of collisions), as applicable to vessel class	MC 11.4 Marine assurance inspection records demonstrate compliance with standard maritime safety procedures (Marine Orders 21, 27 and 30).
	C 11.5 Comply with Marine Order 27 (Safety of navigation and radio equipment) as applicable to vessel class	PS 11.5 Survey vessels compliant with Marine Order 27 (Safety of navigation and radio equipment) as applicable to vessel class	
	C 11.6 Comply with Marine Order 21 (Safety and emergency arrangements), as applicable to vessel class	PS 11.6 Survey vessels compliant with Marine Order 21 (Safety and emergency procedures) as applicable to vessel class	
	C 1.2	PS 1.2 Refer to Section 6.8.1	MC 1.2 Refer to Section 6.8.1

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EPOs, EPSs and MC			
EPO	***Controls***	***PS***	***MC***
	Establish a 500m temporary safety exclusion zone (SEZ) around the survey vessel.		
	C 1.3 AHO will be notified of activities no less than four weeks prior to the commencement of the first activity, and then subsequently when vessels are undertaking activities within the Operational Area for more than three weeks at a time	PS 1.3 Refer to Section 6.8.1	MC 1.3 Refer to Section 6.8.1
	C 1.4 Notify AMSA's Joint Rescue Coordination centre (JRCC) of activities where vessels will be in the Operational Area >3 weeks, 24–48 hours before activities commence.	PS 1.4 Refer to Section 6.8.1	MC 1.4 Refer to Section 6.8.1
	C 1.5 Notify relevant government departments, fishing industry representative bodies and licence holders of activities prior to the commencement and following completion of activities.	PS 1.5 Refer to Section 6.8.1	MC 1.5 Refer to Section 6.8.1
	C 1.6 Survey vessels will have an Indonesian language communication sheet onboard which will include key activity details (such as the timing and location information) to provide to any Indonesian fishers encountered during the activity.	PS 1.6 Refer to Section 6.8.1	MC 1.6 Refer to Section 6.8.1
	C 1.8 Where safe and practicable to do so, Indonesian fishers will be provided with visibility aids, such as reflectors, lights or equivalent devices, for use during night-time operations.	PS 1.7 Refer to Section 6.8.1	MC 1.7 Refer to Section 6.8.1
	C 1.9 Develop a CONOPS/ SIMOPS Plan to manage interactions with other facilities/vessels, where applicable. The CONOPS/ SIMOPS Plan will contain information on: • minimum separation distances	PS 1.8 Refer to Section 6.8.1	MC 1.8 Refer to Section 6.8.1

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EPOs, EPSs and MC			
EPO	***Controls***	***PS***	***MC***
	• communications • vessels/activities involved in CONOPS/ SIMOPS • exclusion zone entry and exit processes • key roles, responsibilities and emergency contacts.		
	C 1.10 Consultation undertaken in support of the Petroleum Activity, so that marine users are informed and aware.	C 1.10 Implement a consultation process that conforms to the requirements of the Environment Regulations.	MC 1.10 Records demonstrate a consultation program that conforms to the requirements of the Environment Regulations has been undertaken (refer to Section 5).
	C 10.3 Comply with Marine Order 91 (Marine Pollution prevention – oil) as relevant to vessel class, which includes mandatory measures for processing oily water before discharge	PS 10.3.1 Refer to Section 6.8.6 PS 10.3.2 Refer to Section 6.8.6	MC 10.3.1 Refer to Section 6.8.6 MC 10.3.2 Refer to Section 6.8.6

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6.9.3 Physical presence: Interaction with marine fauna

Context		
Survey vessels – Section 3.8	Protected Species – Section 4.6	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 survey vessel and threatened and migratory marine fauna					X		A	E	2. Unlikely	M	LCS GP	Acceptable if ALARP	EPO 2 EPO 5 EPO 6

Description of source of impact

The survey vessels operating in and around the Operational Area may present a potential hazard to cetaceans and other protected marine fauna such as whale sharks and marine turtles. 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), or 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. Survey vessels are typically moving at low speeds when conducting geophysical and geotechnical survey activities.

Impact assessment

Environmental value(s) potentially impacted

The likelihood of vessel/marine 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 et al. 2001). Vanderlaan and Taggart (2007) found that the chance of lethally injuring a large whale due to a vessel strike increases from about 20% at 8.6 knots to 80% at 15 knots. According to the data of Vanderlaan and Taggart (2007), it is estimated that the risk is <10% at a speed of 4 knots. Vessel-whale collisions at this speed are uncommon and, based on reported data contained in the US NOAA database (Jensen and Silber 2004), there are only two known instances of collisions when the vessel was travelling at less than 6 knots. Both of these were from whale watching vessels that were deliberately placed among whales.

Survey vessels are likely to be travelling <5 knots in the Operational Area; therefore, the chance of a vessel colliding with protected species and resulting in a lethal outcome is reduced.

The nearest recognised BIAs for cetaceans (considered to be at risk due to relatively slow movement and proportion of time spent at or near the sea surface) is the pygmy blue whale foraging and migration BIAs which overlap the Operational Area (refer to Section 4.6.3). Adverse interactions between vessels and pygmy blue whales are considered to be unlikely due to the slow speeds of survey vessels within the Operational Area (mostly <5 knots). However, the likelihood of encountering individuals increases during migration periods (June-November).

Whale sharks are at risk from vessel strikes when feeding at the surface or in shallow waters (where there is limited option to dive). Whale sharks may traverse offshore NWS waters including the Operational Area during their migrations to and from Ningaloo Reef. However, it is expected that whale shark presence within the Operational Area would not comprise of significant numbers given there is no main aggregation area within the vicinity of the Operational Area, and their presence would be transitory and of a short duration. There are no constraints preventing whale sharks moving away from vessels (e.g. shallow water or shorelines).

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Turtles may occur in the Operational Area since the green turtle habitat critical (nesting) zone is in close proximity to Operational Area Part A. Given the distance of ~23 km from the Operational Area to the nearest shoreline (and potential nesting beaches), impacts to nesting females are not expected. Disturbance to individual mating or internesting behaviours may occur, but given the temporary nature of the disturbance, is unlikely to affect individual breeding success or impact marine turtles at the population level.

Notably, the typical response from turtles on the surface to the presence of vessels is to dive (a potential 'startle' response), which decreases the risk of collisions (Hazel et al. 2007). As with cetaceans, the risk of collisions between turtles and vessels increases with vessel speed (Hazel et al. 2007). Given the low speeds of vessels undertaking the Petroleum Activity, along with the expected low numbers of turtles within the Operational Area, interactions between vessels and turtles are considered to be highly unlikely.

Marine mammals and fish are at risk of mortality through being caught in thrusters during station keeping operations (DP). The risk of listed marine species getting caught in operating thrusters is unlikely, given the low presence of individuals, combined with the avoidance behaviour commonly displayed during DP operations.

It is unlikely vessel movement associated with the Petroleum Activity will significantly impact marine fauna populations, given the low presence of transiting individuals, expected avoidance behaviour commonly displayed by whales and turtles combined with the low operating speed of the survey vessels (generally <5 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 anticipated to have no impact on critical habitat or activity supported by BIAs.

Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[35]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
Legislation, codes and standards				
Implement EPBC Regulations 2025 – Part 8 Division 8.1 Interacting with cetaceans, which includes the following: • Vessels will not travel greater than 6 knots within 300 m of a cetacean (caution zone) • Vessels will not approach closer than 50 m for a dolphin and 100 m for a whale (with the exception of animals bow-riding). • Vessel will not approach within 300 m of a calf. If a calf appears, vessel will immediately withdraw at a constant speed of less than 6 knots. • If the cetacean shows signs of being disturbed, vessels will immediately	F: Yes. CS: Minimal cost. Standard practice.	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.	Controls based on legislative requirements – must be adopted.	Yes C 5.1

[35] *Qualitative measure*

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Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[35]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
withdraw from the caution zone at a constant speed of less than 6 knots.				
Vessels will comply with Biodiversity Conservation Regulations (WA) 2018 for whale shark speed control and separation distances: Vessels will not travel greater than 6 knots within 250 m of a whale shark and not allow the vessel to approach closer than 30 m of a whale shark.	F: Yes. CS: Minimal cost. Standard practice.	Reducing the travel speed of vessels can reduce the sound levels that are produced, reducing the potential impact on whale sharks from survey vessels.	Controls based on legislative requirements – must be adopted.	Yes C 5.2
Good practice				
Vessel speeds in the Operational Area are restricted to 12 knots or less within the pygmy blue whale possible foraging BIA during peak migration periods, unless required for SOLAS.	F: Yes. CS: Minimal cost.	Reducing the travel speed of vessels can reduce the sound levels that are produced, reducing the potential impact on pygmy blue whales within the foraging and migration BIAs.	Benefits outweigh cost/sacrifice	Yes C 5.6
Vessels will not travel greater than 6 knots within 300 m of a turtle (caution zone). If the turtle shows signs of being disturbed, vessels will immediately withdraw from the caution zone at a constant speed of less than 6 knots	F: Yes. CS: Minimal cost.	Reducing the travel speed of vessels can reduce the sound levels that are produced, reducing the potential impact on turtles from survey vessels.	Benefits outweigh cost/sacrifice	Yes C 5.3
Vary the timing of the Petroleum Activity to avoid turtle breeding and hatching periods.	F: No. Timing of activities is linked to project schedule. Timing of all activities is currently not determined, and due to vessel availability and operational requirements, undertaking activities during breeding and hatching periods may not be able to be avoided. CS: Not considered, control not feasible.	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)[35]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
Professional judgement – Eliminate				
No additional controls were identified.				
Professional judgement – Substitute				
No additional controls were identified.				
Professional judgement – Engineered Solution				
The use of dedicated MFOs on the survey vessel for the duration of each activity to watch for whales and provide direction on and monitor compliance with Part 8 of the EPBC Regulations.	F: Yes, however vessel crews already maintain a watch during operations. CS: Additional cost of MFOs beyond that required during surveys considered unnecessary.	Not considered, control not feasible.	Disproportionate. The costs/sacrifice outweighs the benefit gained.	No
Risk-based analysis				
N/A				
Company values				
N/A				
Societal values				
N/A				
ALARP statement: On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A/B/C; Section 2.3.4.2) and Woodside's criteria for demonstrating ALARP (Section 2.4.1), 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 impact/risk assessment has determined that, given the adopted controls, vessel collision with marine fauna may result in slight, short-term local impact (less than one year) on species, habitat (but not affecting ecosystems function), physical or biological attributes. Section 6.9.3 demonstrates that the Petroleum Activity is not inconsistent with any recovery plan of threat abatement plan for a listed threatened species of ecological community. Regard has also been given to relevant conservation advice and wildlife conservation plans during the assessment of potential impacts. On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.3.4.2) and Woodside's criteria for demonstrating acceptability (Section 2.4.2), 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.

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EPOs, EPSs and MC			
EPOs	***Controls***	***PS***	***MC***
EPO 5 No injury of, or mortality to, EPBC Act (Cth) and *Biodiversity Conservation Act 2016* (WA) listed marine fauna as a result of the Petroleum Activity. EPO 6 No displacement of marine turtles from habitat critical during nesting/breeding (inc. internesting periods) and ensure biologically important behaviour can continue in biologically important areas.	C 5.1 Implement EPBC Regulations 2025 Part 8 Division 8.1 Interacting with Cetaceans, which includes the following: • Vessels will not travel greater than 6 knots within 300 m of a cetacean (caution zone). • Vessels will not approach closer than 50 m for a dolphin or 100 m for a whale (except animals bow riding). • Vessel will not approach within 300 m of a calf. If a calf appears, vessel will immediately withdraw at a constant speed of less than 6 knots. • If the cetacean shows signs of being disturbed, vessels will immediately withdraw from the caution zone at a constant speed of less than 6 knots	PS 5.1 Refer to Section 6.8.3	MC 5.1 Refer to Section 6.8.3
	C 5.2 Vessels will comply with *Biodiversity Conservation Regulations (WA) 2018* for whale shark speed control and separation distances: • Vessels will not travel greater than 6 knots within 250 m of a whale shark and not allow the vessel to approach closer than 30 m of a whale shark.	PS 5.2 Refer to Section 6.8.3	MC 5.2 Refer to Section 6.8.3
	C 5.3 Vessels will not travel greater than 6 knots within 300 m of a turtle (caution zone). If the turtle shows signs of being disturbed, vessels will immediately withdraw from the caution zone at a constant speed of less than 6 knots.	PS 5.3 Refer to Section 6.8.3	MC 5.3 Refer to Section 6.8.3

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EPOs, EPSs and MC			
EPOs	***Controls***	***PS***	***MC***
	C 5.6 Vessel speeds in the Operational Area are restricted to 12 knots or less within the pygmy blue whale possible foraging BIA during peak migration periods, unless required for SOLAS.	PS 5.6 Vessels do not travel faster that 12 knots (excluding emergencies)	MC 5.6 Records demonstrate no breaches of vessel speed restrictions

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6.9.4 Physical presence: Disturbance to seabed from dropped objects and equipment loss

Context		
Survey vessels – Section 3.8	Physical Environment – Section 4.4 Habitats and Biological Communities – Section 4.5 Key Ecological Features – Section 4.7	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
Dropped objects resulting in the disturbance of seabed habitat	X			X	X	X	A	F	3	M	LCS GP	Acceptable if ALARP	EPO 3
Accidental loss of significant geophysical or geotechnical equipment				X			A	F	1	L	LCS GP	Acceptable if ALARP	EPO 3

Description of source of impact

While undertaking the activity, towed or Immersible equipment may become detached and lost to the seabed, resulting in disturbance or damage to seabed habitat and/or cultural heritage on the seabed.

In addition, there is the potential for objects to be dropped overboard from the survey vessels to the marine environment. Objects that have been dropped during previous offshore projects include small numbers of personnel protective gear (e.g. glasses, gloves, hard hats), small tools (e.g. spanners), hardware fixtures. The spatial extent in which dropped objects can occur is restricted to the Operational Area.

Impact assessment

Environmental value(s) potentially impacted

In the event of loss of equipment or dropped objects to the marine environment, potential environmental effects are anticipated to include localised physical impacts on seabed habitats. As a result of recovering any dropped objects, impacts to seabed habitats will be temporary in nature. However, if the object cannot be recovered due to health and safety, operational constraints or other factors, then the impact may be longer term or permanent. Impacts to heritage features may be temporary or permanent depending on the nature of the associated values. The areas potentially impacted will depend on the scenario, with equipment loss likely to impact a greater area compared to dropped objects.

The temporary or permanent loss of dropped objects into the marine environment is not likely to have a significant environmental impact on seabed habitats, as the seabed habitats associated with the sand/silt habitats comprising most of the Operational Area are of low sensitivity and are broadly represented throughout the broader region (Section 4.4). Although there are areas of higher sensitivity associated with shoals survey activities are not planned over the shoals and therefore dropped objects over them is not credible. Given the types, size and frequency of dropped objects that could occur, it is unlikely that a dropped object would have a significant impact on the marine environment.

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Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[36]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
Legislation, codes and standards				
Comply with Marine Order 30 (Prevention of collisions) as applicable to vessel class	F: Yes. CS: Minimal cost. Standard practice.	Legislative requirements to be followed reduce the likelihood of collision with other marine users which could incur dropped objects overboard.	Controls based on legislative requirements – must be adopted.	Yes C 11.4
Comply with Marine Order 21 (Safety and emergency arrangements) as applicable to vessel class	F: Yes. CS: Minimal cost. Standard practice.	Legislative requirements to be followed reduce the likelihood of collision with other marine users which could incur dropped objects overboard.	Controls based on legislative requirements – must be adopted.	Yes C 11.6
Good practice				
Apply safe work procedures to prevent dropped objects from survey vessel and during deployment and retrieval of geophysical/ geotechnical equipment.	F: Yes. CS: Minimal cost. Standard practice.	By following these procedures, the likelihood of a dropped object event is reduced. No change in consequence will occur.	Benefits outweigh cost/sacrifice.	Yes C 3.4
Vessel inductions include control measures and training for crew in dropped object prevention.	F: Yes. CS: Minimal cost. Standard practice.	By following these procedures, the likelihood of a dropped object event is reduced. No change in consequence will occur.	Benefits outweigh cost/sacrifice.	Yes C 3.5
Any hazardous solid waste dropped to the marine environment will be recovered, where safe and practicable to do so. Where safe and practicable for this activity, consider: • Risk to personnel to retrieve object • Whether the location of the equipment is known or is in recoverable water depths • Equipment's proximity to subsea infrastructure	F: May not always be possible. Assessed case by case. CS: Potentially significant cost. Standard practice.	Occurs after a dropped object event; therefore, no change to the likelihood. Since the object may be recovered, a reduction in consequence is possible.	Benefits outweigh cost/sacrifice.	Yes C 3.6

[36] *Qualitative measure*

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Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[36]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
• Ability to recover the equipment (i.e. nature of object, lifting equipment or ROV availability and suitable weather).				
Professional judgement – Eliminate				
No additional controls were identified.				
Professional judgement – Substitute				
No additional controls were identified.				
Professional judgement – Engineered Solution				
No additional controls were identified.				
Risk-based analysis				
N/A				
Company values				
N/A				
Societal values				
N/A				
ALARP statement: On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.3.4.2) and Woodside's criteria for demonstrating ALARP (Section 2.4.1), Woodside considers the adopted controls appropriate to manage potential risks associated with seabed disturbance from dropped objects and/or equipment loss. 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
The risk assessment has determined that, given the adopted controls dropped objects and/or equipment loss will not result in a potential impact greater than minor and temporary disruption to a small area of the seabed, this would comprise a small proportion of the benthic population, and no impact on critical habitat or activity. Dropped objects within the Ancient Landscape could impact cultural heritage associated with this area, however, this would also comprise a small area. Further opportunities to reduce the impacts and risks have been investigated above. The adopted controls are considered good survey practice/industry best practice. On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.3.4.2) and Woodside's criteria for demonstrating acceptability (Section 2.4.2), Woodside considers impacts/risks to be managed to a level that is broadly acceptable.

EPOs, EPSs and MC			
EPO	***Controls***	***PS***	***MC***
EPO 3 Seabed disturbance to be limited to planned activities and impacts described as part of the Petroleum Activity and will not occur	C 3.4 Apply safe work procedures to prevent dropped objects from survey vessel and during deployment and retrieval of	PS 3.4.1 Operational procedures will be in-place on board the vessel for deployment and retrieval of geophysical	MC 3.4.1 Project Execution Plan confirms Safe Work procedures for deployment and retrieval of survey equipment are in place.

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EPOs, EPSs and MC			
EPO	***Controls***	***PS***	***MC***
outside the Operational Area.	geophysical/ geotechnical equipment.	and geotechnical equipment.	
		PS 3.4.2 Geotechnical design packs will be provided by the Contractor to demonstrate that geotechnical equipment rigging and supporting structures do not become overloaded during any phase of the geotechnical equipment deployment or recovery operations.	MC 3.4.2 Geotechnical design pack is completed prior to geotechnical survey mobilisation.
	C 3.5 Vessel inductions include control measures and training for crew in dropped object prevention.	PS 3.5 Crew training/inductions, and job safety analyses where relevant, will include a component on preventing dropped objects to increase awareness of requirements.	MC 3.5 Records show training to minimise the potential for dropped objects is provided to the survey vessel(s) crew.
	C 3.6 Any hazardous solid waste dropped to the marine environment will be recovered, where safe and practicable to do so. Where safe and practicable for this activity, consider: • Risk to personnel to retrieve object • Whether the location of the equipment is known or is in recoverable water depths • Equipment's proximity to subsea infrastructure • Ability to recover the equipment (i.e. nature of object, lifting equipment or ROV availability and suitable weather).	PS 3.6 Any dropped objects and/or geophysical/ geotechnical equipment lost to the marine environment will be recovered where safe and practicable to do so Where safe and practicable for this activity, consider: • risk to personnel to retrieve object • whether the location of the object is in recoverable water depths • the object's proximity to subsea infrastructure • ability to recover the object (i.e. nature of object, lifting equipment or ROV availability, and suitable weather).	MC 3.6 Incident reports detail the recovery attempt consideration and status of any dropped objects and/or geophysical/geotechnical equipment lost to the marine environment.
	C 11.4 Comply with Marine Order 30 (Prevention of collisions) as applicable to vessel class	PS 11.4 Refer to Section 6.9.2	MC 11.4 Refer to Section 6.9.2

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EPOs, EPSs and MC			
EPO	***Controls***	***PS***	***MC***
	C 11.6 Comply with Marine Order 21 (Safety and emergency arrangements), as applicable to vessel class	PS 11.6 Refer to Section 6.9.2	MC 11.4 Refer to Section 6.9.2

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6.9.5 Unplanned discharges: Loss of solid hazardous and non-hazardous wastes

Context		
Survey vessels – Section 3.8	Physical Environment – Section 4.4 Habitats and Biological Communities – Section 4.5 Protected Species – Section 4.6 Key Ecological Features – Section 4.7 Protected Places – Section 4.8	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 loss of hazardous or non-hazardous wastes/ equipment to the marine environment	X	X		X	X		A	F	3	M	LCS GP	Acceptable if ALARP	EPO 12

Description of source of impact

The survey 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. Woodside has not reported any significant loss of solid wastes to the marine environment during the past 12 months of geophysical and/or geotechnical operations. Equipment that has been recorded as being lost (primarily windblown or dropped overboard) have included the loss of a metal pole and hardhat. These have occurred during periods of adverse weather and incorrect waste storage.

Marine debris has been identified as a threat to humpback whales, marine turtles, whale sharks and sawfish (CoA 2015a, 2015b, Threatened Species Scientific Committee (TSSC) 2015).

Impact assessment

Environmental value(s) potentially impacted

The potential impacts of solid wastes accidentally discharged to the marine environment include direct pollution and contamination of the environment. Secondary impacts relate to potential contact of marine fauna with wastes, resulting in entanglement or ingestion and leading to injury and death of individual animals. The temporary or permanent loss of waste materials into the marine environment is not likely to have a significant environmental impact, based on the types, size and frequency of wastes that could occur and species present.

Demonstration of ALARP

Control considered	*Control feasibility (F) and cost/sacrifice (CS)*[37]	*Benefit in impact/risk reduction*	*Proportionality*	*Control adopted*
Legislation, codes and standards				
Comply with Marine Order 91 (Marine Pollution prevention – oil) as relevant to vessel class, which	F: Yes. CS: Minimal cost. Standard practice.	No reduction in consequence would result.	Controls based on legislative requirements – must be adopted.	Yes C 10.3

[37] *Qualitative measure*

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Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[37]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
includes mandatory measures for processing oily water before discharge				
Apply Marine Order 95 (Marine pollution prevention – garbage) as appropriate to vessel class	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 C 10.1
Good practice				
Implement a Vessel Waste Management Plan, which includes requirements for waste to ensure no waste is lost to the marine environment, as applicable to vessel class	F: Yes. CS: Minimal cost. Standard practice.	Controls outlined in the management plan will reduce the likelihood of an unplanned release. The consequence is unchanged.	Benefit outweighs cost sacrifice.	Yes C 12.1
Apply safe work procedures to prevent dropped objects from survey vessel and during deployment and retrieval of geophysical/ geotechnical equipment.	F: Yes. CS: Minimal cost. Standard practice.	By following these procedures, the likelihood of a dropped object event is reduced. No change in consequence will occur.	Benefits outweigh cost/sacrifice.	Yes C 3.4
Vessel inductions include control measures and training for crew in dropped object prevention.	F: Yes. CS: Minimal cost. Standard practice.	By following these procedures, the likelihood of a dropped object event is reduced. No change in consequence will occur.	Benefits outweigh cost/sacrifice.	Yes C 3.5
Any hazardous solid waste dropped to the marine environment will be recovered, where safe and practicable to do so. Where safe and practicable for this activity, consider: • Risk to personnel to retrieve object • Whether the location of the equipment is known or is in recoverable water depths • Equipment's proximity to	F: Yes. CS: Minimal cost. Standard practice.	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.	Benefit outweighs cost sacrifice.	Yes C 3.6

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Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[37]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
subsea infrastructure • Ability to recover the equipment (i.e. nature of object, lifting equipment or ROV availability and suitable weather).				
Professional judgement – Eliminate				
No additional controls were identified.				
Professional judgement – Substitute				
No additional controls were identified.				
Professional judgement – Engineered Solution				
No additional controls were identified.				
Risk-based analysis				
N/A				
Company values				
N/A				
Societal values				
N/A				
ALARP statement: On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.3.4.2) and Woodside's criteria for demonstrating ALARP (Section 2.4.1), Woodside considers the potential risks associated with accidental discharge of solid waste to be ALARP. 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
The risk assessment has determined that, given the adopted controls, accidental discharge of solid waste may result in impacts with no lasting effect and a short-term localised impact in species, habitat (but not affecting ecosystem function), physical and biological attributes. Further opportunities to reduce the impacts and risks have been investigated above. The adopted controls are considered good survey practice/industry best practice and meet legislative requirements (Marine Orders 94 and 95). On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.3.4.2) and Woodside's criteria for demonstrating acceptability (Section 2.4.2), Woodside considers impacts/risks to be managed to a level that is broadly acceptable.

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EPOs, EPSs and MC			
EPO	***Controls***	***PS***	***MC***
EPO 12 No releases of solid hazardous or non-hazardous waste to the marine environment.	C 3.4 Apply safe work procedures to prevent dropped objects from survey vessel and during deployment and retrieval of geophysical/ geotechnical equipment.	PS 3.4.1 Refer to Section 6.9.4	MC 3.4.1 Refer to Section 6.9.4.
		PS 3.4.2 Refer to Section 6.9.4	MC 3.4.2 Refer to Section 6.9.4.
	C 3.5 Vessel inductions include control measures and training for crew in dropped object prevention.	PS 3.5 Refer to Section 6.9.4	MC 3.5 Refer to Section 6.9.4.
	C 3.6 Any hazardous solid waste dropped to the marine environment will be recovered, where safe and practicable to do so. Where safe and practicable for this activity, consider: • Risk to personnel to retrieve object • Whether the location of the equipment is known or is in recoverable water depths • Equipment's proximity to subsea infrastructure • Ability to recover the equipment (i.e. nature of object, lifting equipment or ROV availability and suitable weather).	PS 3.6 Refer to Section 6.9.4	MC 3.6 Refer to Section 6.9.4
	C 10.1 Apply Marine Order 95 (Marine pollution prevention – garbage) as appropriate to vessel class	PS 10.1 Refer to Section 6.8.6	MC 10.1 Refer to Section 6.8.6
	C 10.3 Comply with Marine Order 91 (Marine Pollution prevention – oil) as relevant to vessel class, which includes mandatory measures for processing oily water before discharge	PS 10.3.1 Refer to Section 6.8.6 PS 10.3.2 Refer to Section 6.8.6	MC 10.3.1 Refer to Section 6.8.6 MC 10.3.2 Refer to Section 6.8.6
	C 12.1 Implement a Vessel Waste Management Plan, which	PS 12.1 Hazardous and non-hazardous waste will be	MC 12.1 Environment inspection records demonstrate

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EPOs, EPSs and MC			
EPO	***Controls***	***PS***	***MC***
	includes requirements for waste to ensure no waste is lost to the marine environment, including: • Records shall be maintained of all waste to be disposed, treated or recycled. They shall include quantity and type of waste, and disposal/ recycle location • Waste streams shall be handled and managed according to their hazard and recyclability class. • All waste storage facilities kept in good working order and designed in such a way as to prevent or contain any discharges. • All hazardous wastes will be segregated prior to onshore disposal. • Where practicable, wastes are secured and covered to ensure no accidental loss	managed in accordance with the Vessel Waste Management Plan.	compliance against Vessel Waste Management Plan

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6.9.6 Unplanned discharges: Deck and subsea spills from geotechnical and geophysical equipment

Context		
Survey vessels – Section 3.8	Physical Environment – Section 4.4 Habitats and Biological Communities – Section 4.5 Protected Species – Section 4.6 Key Ecological Features – Section 4.7 Protected Places – Section 4.8 Socio-economic environment – Section 4.9	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 to the ocean of other hydrocarbons/chemicals from survey vessel deck activities and equipment (e.g. cranes).	X	X			X	X	A	F	3	M	LCS GP PJ	Acceptable if ALARP	EPO 13
Subsea release of hydraulic fluid from geotechnical and geophysical survey equipment.	X	X			X	X	A	F	3	M	LCS GP PJ	Acceptable if ALARP	EPO 13
Accidental release of drilling fluids from borehole activity.	X	X			X	X	A	F	3	M	LCS GP PJ	Acceptable if ALARP	EPO 13

Description of source of impact

Vessels

Survey vessels will need to store small quantities of lubricating oils and hydraulic fluid on the vessel, which have the potential to spill if not appropriately managed. Hydraulic fluid may also potentially be spilled from a leak in hoses or lines on hydraulic equipment such as cranes or winches. Deck spills can result from spills from stored hydrocarbons/chemicals (including those used during geotechnical activities for borehole drilling) or equipment. Due to the short duration of surveys, significant chemical/fluid storage volumes are not anticipated. 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).

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Woodside's operational experience demonstrates that spills are most likely to originate from hydraulic hoses and have previously been <100 L, with an average volume <10 L.

Geotechnical survey equipment

Survey vessels will place equipment on the seabed which may contain relatively small volumes, ~5–10 L, depending on the system, of hydraulic fluid. The hydraulic fluid enables various mechanical functions to be performed.

Some of the equipment requiring the supply of hydraulic fluid includes sources such as PCPT. PCPT involves pushing a penetrometer (probe) into the seabed at a constant rate of penetration to continuously measure the resistance, friction and water pressure. There is the potential for hoses and seals associated with these systems to fail (i.e. hoses burst or crack) during operation, or leaks as a result of shifts in temperature or pressure can result in small volumes of hydraulic fluid being released to the marine environment. Geotechnical equipment is not designed to intentionally release hydraulic fluid in geotechnical operations. If equipment fails, there is the potential for <10 L to be released from the hydraulic source.

Towed equipment

If a CHIRP, boomer or sparker is used, the receiver will consist of individual hydrophone elements located within neutrally buoyant, synthetic hydrocarbon filled tubing. They typically contain ~8–12 hydrophone elements evenly spaced in ~100 m long, 25 mm diameter tubes. The cable will hold about 5 L of hydrophone fluid. The hydrophone cable has the potential to be punctured, resulting a leakage of fluid for a variety of reasons, including damage during deployment or retrieval.

Impact assessment

Environmental value(s) potentially impacted

Accidental spills of hydrocarbons or chemicals from the vessels and geotechnical and geophysical survey equipment will decrease the water quality in the immediate area of the spill. However, the impacts are expected to be temporary and very localised as only small volumes of hydrocarbons or chemicals are likely to be used which are expected to rapidly disperse and dilute in the marine environment.

Receptors such as marine fauna may be affected if they come in direct contact with a release (i.e. by traversing the immediate spill area). If marine fauna come into contact with a release, they could suffer fouling, ingestion, inhalation of toxic vapours, irritation of sensitive membranes in the eyes, mouth, digestive and respiratory tracts, and organ or neurological damage. Cetaceans may exhibit avoidance behaviour patterns and, given they are smooth skinned, hydrocarbons and other chemicals are not expected to adhere. Given the small area of the potential spill and the dilution and weathering of any spill, the likelihood of ecological impacts to marine fauna (protected species), other communities and habitats is likely to be slight.

No impacts on socio-economic receptors are expected, due to the small volumes of hydrocarbons/chemicals that could be accidentally spilled and the localised and temporary nature of the impacts.

Demonstration of ALARP

Control considered	*Control feasibility (F) and cost/sacrifice (CS)*[38]	*Benefit in impact/risk reduction*	*Proportionality*	*Control adopted*
Legislation, codes and standards				
Comply with Marine Order 91 (Marine Pollution prevention – oil) as relevant to vessel class, which includes mandatory measures for processing oily water before discharge	F: Yes. CS: Minimal cost. Standard practice.	Legislative requirements to be followed reduce the likelihood of an unplanned release including vessel maintenance requirements. The consequence is unchanged.	Controls based on legislative requirements – must be adopted.	Yes C 10.3
In the event of a spill, implement emergency response activities in accordance with the Oil	F: Yes CS: Minimal cost. Standard practice.	Implementing the oil pollution response control measures will reduce the	Controls based on legislative	Yes C 11.2

[38] *Qualitative measure*

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Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[38]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
Pollution First Strike Plan (Appendix H).		consequence of impacts resulting from hydrocarbon discharges to the environment. No change to likelihood.	requirements – must be adopted.	
Chemicals will be stored safely to prevent the release to the marine environment.	F: Yes. CS: Minimal cost. Standard practice.	Implementing procedures for chemical storage and handling on the vessels will reduce the consequence of impacts resulting from discharges to the marine environment by ensuring chemicals have been assessed for environmental acceptability.	Controls based on legislative requirements – must be adopted.	Yes C 13.1
Good practice				
No additional controls were identified.				
Professional judgement – Eliminate				
No additional controls were identified.				
Professional judgement – Substitute				
No additional controls were identified.				
Professional judgement – Engineered Solution				
Store all hydrocarbons and chemicals below-deck.	F: No. During operations, small volumes must be kept near activities and within equipment requiring hydrocarbons and chemicals, and can result in an increased risk of leaks from transfers via hose or smaller containers. CS: Not considered, control not feasible.	Not considered, control not feasible.	Not considered, control not feasible.	No
Reduce the volumes of chemicals and hydrocarbons stored onboard the vessel.	F: Yes. 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 survey vessel.	No reduction in likelihood or consequence since chemicals will still be required to enable activities to occur.	Disproportionate. The cost/sacrifice outweighs the benefit gained.	No

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Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[38]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
Risk-based analysis				
N/A				
Company values				
N/A				
Societal values				
N/A				
ALARP statement: On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.3.4.2) and Woodside's criteria for demonstrating ALARP (Section 2.4.1), Woodside considers the adopted controls appropriate to manage potential risks associated with an unplanned minor discharge or hydrocarbons as a result of minor deck and subsea spills. 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 an unplanned minor discharge of hydrocarbons or chemicals as a result of minor deck and subsea spills represents a low risk rating that is unlikely to result in potential impact greater than localised, with no lasting effect and not significant to environmental receptors. Further opportunities to reduce the impacts and risks have been investigated above. The adopted controls are consistent with the most relevant regulatory guidelines and good survey practice/industry best practice. On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.3.4.2) and Woodside's criteria for demonstrating acceptability (Section 2.4.2), Woodside considers risks to be managed to a level that is broadly acceptable.

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EPOs, EPSs and MC			
EPO	***Controls***	***PS***	***MC***
EPO 13 No release of hydrocarbons or chemicals to the marine environment during the Petroleum Activity.	C 10.3 Comply with Marine Order 91 (Marine Pollution prevention – oil) as relevant to vessel class, which includes mandatory measures for processing oily water before discharge	PS 10.3.1 Refer to Section 6.8.6 PS 10.3.2 Refer to Section 6.8.6	MC 10.3.1 Refer to Section 6.8.6 MC 10.3.2 Refer to Section 6.8.6
	C 11.2 In the event of a spill, implement emergency response activities in accordance with the Oil Pollution First Strike Plan (Appendix H)	PS 11.2 Refer to Section 6.9.2	MC 11.2 Refer to Section 6.9.2
	C 13.1 Chemicals will be stored safely to prevent the release to the marine environment.	PS 13.1 Liquid chemical and fuel storage areas are bunded or secondarily contained when they are not being handled/moved temporarily.	MC 13.1 Environment inspection records confirm all liquid chemicals and fuel are stored in bunded/ secondarily contained areas when not being handled/moved temporarily.

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6.9.7 Physical presence: Introduction of invasive marine species

Context		
Survey vessels – Section 3.8	Physical Environment – Section 4.4 Habitats and Biological Communities – Section 4.5 Protected Species – Section 4.6 Socio-economic environment – Section 4.9	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)				X	X	X	A	B	0.	M	LCS GP PJ RBA CV SV	Acceptable if ALARP	EPO 14

Description of source of impact

Vessel operations

During the Petroleum Activity, vessels will be transiting to and from the Operational Area, which may include traffic mobilising from beyond Australian waters.

All vessels are subject to some level of marine fouling. Organisms attach to the vessel hull, particularly in areas where organisms can find a good attachment surface (e.g. seams, strainers and unpainted surfaces) or where turbulence is lowest (e.g. niches and sea chests). Commercial vessels typically maintain anti-fouling coatings to reduce the build-up of fouling organisms.

Organisms can also be drawn into ballast tanks during onboarding of ballast water as cargo is loaded or to balance vessels under load.

Immersible equipment

The geophysical and geotechnical survey equipment will also be transported to and used within the Operational Area. As there is the potential for the equipment to be used on other projects before being used on this activity, there is the potential for invasive marine species (IMS) translocation.

During the Petroleum Activity, survey vessels and immersible equipment have the potential to introduce IMS to the Operational Area through biofouling and ballast water exchange (as described above).

Impact assessment

Environmental value(s) potentially impacted

Non-indigenous marine species (NIMS) have been introduced into a region beyond their natural biogeographic range and have the ability to survive, reproduce and establish founder populations. Not all NIMS introduced into an area will thrive or cause demonstrable impacts. Indeed, the majority of NIMS around the world are relatively benign and few have spread widely beyond sheltered ports and harbours. Only a subset of NIMS that become abundant and impact on social/cultural, human health, economic and/or environmental values can be considered IMS.

Potential IMS have historically been introduced and translocated around Australia by various natural and human means including biofouling 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.

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 food, space or light and can also interbreed with local species, creating hybrids so the endemic species is lost. These changes to the local marine environment result in changes to the natural ecosystem.

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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.

Survey vessels and Immersible equipment have the potential to introduce IMS into the Operational Area. Due to the shallow water depths in some areas, settlement and establishment of IMS is credible, albeit remote, given control measures in place.

Summary of potential impacts to environmental value(s)

In support of Woodside's assessment of the impacts and risks of IMS introduction associated with the Petroleum Activity, risk and impact evaluations of the different aspects of marine pest translocation associated with the activity are undertaken. The results of this assessment are presented in the table below. As a result of this assessment Woodside has presented the highest potential consequence as a B (Major) and likelihood as Remote (0), resulting in an overall Moderate risk following the implementation of identified controls.

Table 6-17: Credibility, consequence and likelihood of introducing invasive marine species

IMS introduction location	Credibility of introduction	Consequence of introduction	Likelihood
Introduced to Operational Area/transfer of IMS from infected vessel to Operational Area and establishment on the seafloor or subsea structures.	**Operational Area Part A** **Credible** There is the potential for IMS to be transferred to the sediment in the operational area, however there are no shallow shoal features within. There is the potential for IMS to be transferred to the shallow shoal areas adjacent (e.g. Scott Reef complex) to Operational Area Part A.	**Environment – Not Credible** The translocation of IMS from a colonised survey vessel to shallower environment via natural dispersion is not considered credible given the vessels are not expected to directly interact with shallow shoals outside of the Operational Area and distances of the Operational Area to shallow nearshore environments is >3 nm (>5 km). There is therefore no credible environmental risk and the assessment is limited to Woodside's reputation. **Reputation – B** If IMS were to establish on a survey vessel this could potentially impact the vessel operationally through the fouling of intakes, result in translocation of an IMS into the Operational Area and, depending on the species, potentially transfer of an IMS to other survey vessels, which would likely result in the quarantine of the vessel until eradication could occur (through cleaning and treatment of infected	**Remote (0)** Spread of marine pests via ballast water or biofouling in these open ocean environments (and given Operational Area is > 350m) is also considered remote. Survey vessels are not planned to directly interact with shoals as they are outside of Operational Area.

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		areas), which would be costly to perform. Such introduction would be expected to have slight impact to Woodside's reputation, particularly with Woodside's contractors, and would likely have a reputational impact on future proposals.	
		Environment – Not Credible The translocation of IMS from a colonised survey vessel to shallower environments via natural dispersion is not considered credible given the vessels are not expected to directly interact with shoals and distances of the Operational Area to shallow nearshore environments is >12 nm (~35 km). There is therefore no credible environmental risk and the assessment is limited to Woodside's reputation. **Reputation – B** If IMS were to establish on a survey vessel this could potentially impact the vessel operationally through the fouling of intakes, result in translocation of an IMS into the Operational Area and, depending on the species, potentially transfer of an IMS to other survey vessels, which would likely result in the quarantine of the vessel until eradication could occur (through cleaning and treatment of infected areas), which would be costly to perform. Such introduction would be expected to have slight impact to Woodside's reputation, particularly with Woodside's contractors, and would likely have a reputational impact on future proposals.	
	Operational Area Part B **Not Credible**		
Introduced to Operational Area and establishment on a survey vessel.	**Operational Area Part A** **Credible** There is potential for the transfer of marine pests between survey vessels within Operational Area Part A.		**Remote (0)** Spread of marine pests via ballast water or spawning in these open ocean environments is also considered remote.
	Operational Area Part B **Not Credible**		
Transfer between survey vessels and from vessels	**Not Credible**		

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to other marine environments beyond the Operational Area.	This risk is considered so remote that it is not credible for the purposes of the assessment. The transfer of a marine pest between survey vessels is considered remote, given the offshore open ocean environment (i.e. transfer pathway discussed above). For a marine pest to then establish a mature spawning population on the new survey vessel (which would have been through Woodside's IMS process) and then transfer to another environment is not considered credible. Operational Area where the vessels will operate are located offshore in an oceanic environment, which is uncongenial to the long-term survival of IMS. In the event of a vessel-to-vessel transfer (considered remote), the marine pest would need to become established on a new vessel with good hygiene (i.e. passed Woodside's vessel IMS risk assessment), survive the transport beyond the Operational Area, transfer and become established again elsewhere. This scenario is not considered to be credible.

Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[39]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
Legislation, codes and standards				
Vessels will manage their ballast water using one of the approved ballast water management options, as outlined in the Australian Ballast Water Management Requirements. This applies to all vessels that will enter the Operational Area, including those carrying out activities outside of Australian Territorial Seas (>12nm).	F: Yes. CS: Minimal cost. Standard practice.	Reduces the likelihood of transferring marine pests between vessels within the Operational Area. No change in consequence would occur.	Controls based on legislative requirements under the *Biosecurity Act 2015* (Cth) – must be adopted.	Yes C 14.1
Vessels will manage their biosecurity risk associated with biofouling, as outlined in the Australian Biofouling Management Requirements.	F: Yes. CS: Minimal cost. Standard practice.	Reduces the likelihood of transferring marine pests between vessels within the Operational Area. No change in consequence would occur.	Controls based on legislative requirements under the *Biosecurity Act 2015* (Cth) – must be adopted.	Yes C 14.2
Good practice				
Apply Woodside's IMS risk Assessment Process (Section 7.2.2) to vessels and relevant immersible equipment that enter the Operational Area unless exempt. Based on the outcomes of each IMS	F: Yes. CS: Good Practice implemented across all Woodside operations	The IMS risk assessment process will identify potential risks and additional controls implemented accordingly. In doing so, the likelihood of transfer of IMS between vessels within the Operational Area is reduced. No change in	Benefits outweigh cost/sacrifice	Yes C 14.3

[39] *Qualitative measure*

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Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[39]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
risk assessment, management measures commensurate with the risk will be implemented to minimise the likelihood of IMS being introduced.		consequence would occur.		
Professional judgement – Eliminate				
No discharge of ballast water during the Petroleum Activity.	F: Yes, however 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 a safety critical requirement. CS: Not assessed, due to safety critical element.	Elimination of the potential introduction of IMS, if present within the ballast water.	Legislative requirements (C 14.1) are required to be implemented to manage potential ballast water risk to low. Noting the safety critical element and the adopted control (C 14.1) this is disproportionate to the risk reduction).	No
Eliminate use of vessels.	F: No. Given vessels must be used to complete the Petroleum Activity, there is no feasible means to eliminate the source of risk. CS: Loss of the project.	Not considered- control not feasible.	Not considered - control not feasible.	No
Infield IMS inspection of geotechnical/ geophysical vessel(s) upon arrival into Operational Area	F: Yes, implementation of an infield IMS survey is considered technically feasible, however with significant operational constraints. Any IMS infield survey activities would have to be carried out via ROV as diving is not considered ALARP under Contractor(s) or Company Health and Safety Management systems. The geotechnical/geophysical vessels may not possess DP2 capabilities and is not permitted to deploy an ROV. Therefore, a dedicated additional specialist support vessel equipped with DP2 capability, ROV systems and additional technical crew would be required	No benefit in risk reduction would be achieved because IMS risk has already been managed through implementation of the Woodside's IMS risk assessment process and the Biosecurity Act 2015. An infield inspection would not materially reduce the residual likelihood or consequence of IMS introduction beyond the existing controls.	Disproportionate. Any additional benefit gained through implementation of this control is disproportionate to the cost and effort required to undertake this control infield. The IMS risk has already been managed through controls adopted (and noting already incurred cost through implementation of Woodside's IMS risk assessment process (i.e. inspections and cleaning where risk warrants)).	No

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Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[39]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
	to undertake the IMS survey. CS: Significant cost. The survey would require mobilisation of additional vessel and crew to field, specialist personnel and equipment for the ROV, vessel time, and additional offshore operations. Ability to access some niches may be limited due to type of infield inspection capabilities and safety restrictions i.e. thruster.			
Professional judgement – Substitute				
Inspect all vessels for IMS.	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 is seen to be more cost-effective as this control allows Woodside to manage the introduction of marine pests through biofouling, while targeting its efforts and resources to areas of greatest concern.	Inspecting 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
Source vessels based in Australia only.	F: Potentially. Limiting activities to only use local survey vessels could pose a significant risk in terms of time and duration of sourcing the vessel, as well as the ability of the local vessels to perform the required tasks. While the Petroleum Activity will attempt to source vessels locally, it is not always possible. Availability cannot always be guaranteed when considered competing oil and gas activities in the region. Sourcing Australian-based vessels will also	Sourcing vessels from within Australia will reduce the likelihood of introducing IMS from outside Australian waters. However, it will not reduce the likelihood of introducing species native to Australia but alien to the Operational Area. It also does not prevent the translocation of IMS that have established elsewhere in Australia. The consequence is unchanged.	Disproportionate. Sourcing survey vessels from Australian waters may reduce the likelihood of introducing IMS to the Operational Area; however, it does not eliminate the risk. Furthermore, the cost to implement this control could be high, given the potential schedule impacts due to restrictions of vessel hire opportunities.	No

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Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[39]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
	cause increases in cost due to pressures of vessel availability. CS: Significant cost and schedule impacts due to restrictions of vessel hire opportunities.			
Professional judgement – Engineered Solution				
No additional controls were identified.				
Risk-based analysis				
N/A				
Company values				
N/A				
Societal values				
N/A				
ALARP statement: On the basis of the environmental risk assessment outcomes, use of relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.3.4.2), and Woodside's criteria for demonstrating ALARP (Section 2.4.1), Woodside considers the adopted controls appropriate to manage the impacts and risks of IMS introduction and establishment. As no reasonable additional/alternative controls were identified that would further reduce the impacts and risks without grossly disproportionate sacrifice, the impacts and risks are considered ALARP.				

Demonstration of acceptability
Acceptability statement: The risk assessment demonstrates that, with the adopted controls, there is a low residual risk of IMS introduction, establishment and spread to the Operational Area. Consistent with NOPSEMA guidance, the risk assessment identified key risk factors and informed appropriate management measures to minimise the risk of marine pest introduction, establishment and spread (NOPSEMA, 2026). This approach aligns with the MarinePestPlan 2018–2023, which establishes a national objective to minimise the risk of marine pest introduction, establishment and spread (Commonwealth of Australia, 2018b). In this context, "introduction" represents the risk event (translocation of marine pest species), whereas material environmental impact is contingent on subsequent "establishment" (survival, reproduction and persistence). The low residual risk to environmental receptors is acceptable (see risk ratings matrix in Table 2-2), because it represents a level at which the potential risk can be effectively managed by adhering to applicable legislative requirements, industry guidelines, and/or internal Woodside procedures (Section 2.3.3). At this risk level the likelihood of the unplanned event resulting in a minor environmental consequence (D or below) is remote (see likelihood levels in Table 2-3) IMS risks are managed across the full continuum of introduction, establishment and spread, and recognising that ecological impacts arise only where establishment occurs (Commonwealth of Australia, 2013), the adopted controls are designed to minimise both the likelihood of introduction and the potential for establishment of IMS (NOPSEMA, 2026). Further opportunities to reduce risks have been considered above, and the selected controls reflect good industry practice and comply with applicable legislative requirements, including the Biosecurity Act 2015. In line with national guidance (Commonwealth of Australia, 2013; Commonwealth of Australia, 2018b; NOPSEMA, 2026) the EPO for this risk sets a level of performance preventing the introduction of invasive marine species to and within the Operational Area and focuses on prevention through the management of vessel biofouling and ballast water. On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A/B/C; Section 2.3.4.2) Woodside considers the adopted controls appropriate so that IMS risks are reduced to an acceptable level and that the EPO reflects that level. Compliance with the adopted controls will demonstrates that the EPO has been met.

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EPOs, EPSs and MC			
EPO	***Controls***	***PS***	***MC***
EPO 14 No introduction of invasive marine species into the Operational Area as a result of the Petroleum Activity.	C 14.1 Vessels will manage their ballast water using one of the approved ballast water management options, as outlined in the Australian Ballast Water Management Requirements. This applies to all vessels that will enter the Operational area, including those carrying out activities outside of Australian Territorial Seas (>12nm)	PS 14.1 Prevents the translocation of IMS within the vessel's ballast water from high-risk locations to the Operational area.	MC 14.1 Ballast Water Records System maintained by vessels which verifies compliance against Australian Ballast Water Management Requirements.
	C 14.2 Vessels will manage their biosecurity risk associated with biofouling, as specified in the Australian Biofouling Management Requirements.	PS 14.2 Compliance with Australia Biofouling Management Requirements (as defined under the *Biosecurity Act*) to prevent the introduction of IMS.	MC 14.2 Woodside Invasive Marine Species Vessel and Equipment Questionnaire details ballast water management and internal biofouling treatment systems.
	C 14.3 Apply Woodside's IMS risk assessment process (Section 7.2.2) to vessels and relevant immersible equipment that enter the Operational Area unless exempt. Based on the outcomes, management measures commensurate with the risk will be implemented to minimise the likelihood of IMS being introduced.	PS 14.3.1 Before entering the Operational area, vessels and relevant immersible equipment are determined to be low risk [40] of introducing IMS of concern.	MC 14.3.1 Records of IMS risk assessments are maintained for all vessels and relevant immersible equipment entering the Operational area to undertake the Petroleum Activity.
		PS 14.3.2 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 a qualified and experienced IMS inspector.	MC 14.3.2 Records confirm the IMS risk assessments were undertaken by an Environment Adviser or IMS inspector (as relevant).

6.10 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 (CoA 2017)
- Conservation Management Plan for the Blue Whale 2015–2025 (CoA 2015b)

[40] 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'.

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- Recovery Plan for the Grey Nurse Shark (C*archarias taurus*) 2014 (CoA 2014)
- Sawfishes and River Sharks Multispecies Recovery Plan (CoA 2015c)
- Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans 2018 (CoA 2018).

Table 6-18 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.

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Table 6-18: 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***
Marine Turtle Recovery Plan			
Long-term Recovery Objective: Minimise anthropogenic threats to allow for the conservation status of marine turtles to improve so they can be removed from the EPBC Act threatened species list	Y	Y	Y
Interim recovery objectives			
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	
Action areas			
A. Assessing and addressing threats			
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. Enabling and measuring recovery			

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EPBC Act Part 13 statutory instrument	Applicable to:		
	Government	***Titleholder***	***Petroleum Activity***
B1. Determine trends in index beaches	Y	Y	N
B2. Understand population demographics at key foraging grounds	Y		
B3. Address information gaps to better facilitate the recovery of marine turtle stocks	Y	Y	N
Blue Whale Conservation Management Plan			
Long-term recovery objective: Minimise anthropogenic threats to allow for their conservation status to improve so that they can be removed from the EPBC Act threatened species list	Y	Y	Y
Interim recovery objectives			
The conservation status of blue whale populations is assessed using efficient and robust methodology	Y		
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
Action areas			
A. Assessing and addressing threats			
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. Enabling and measuring recovery			
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

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EPBC Act Part 13 statutory instrument	Applicable to:		
	Government	***Titleholder***	***Petroleum Activity***
Grey Nurse Shark Recovery Plan			
Overarching objective			
To assist the recovery of the grey nurse shark in the wild, throughout its range in Australian waters, with a view to: • improving the population status, leading to future removal of the grey nurse shark from the threatened species list of the EPBC Act • ensuring that anthropogenic activities do not hinder the recovery of the grey nurse shark in the near future, or impact on the conservation status of the species in the future	Y	Y	Y
Specific objectives			
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	N
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		

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EPBC Act Part 13 statutory instrument	Applicable to:		
	Government	***Titleholder***	***Petroleum Activity***
Sawfish and River Sharks Recovery Plan			
Primary objective			
To assist the recovery of sawfish and river sharks in Australian waters with a view to: • improving the population status leading to the removal of the sawfish and river shark species from the threatened species list of the EPBC Act • ensuring that anthropogenic activities do not hinder recovery in the near future, or impact on the conservation status of the species in the future	Y	Y	Y
Specific objectives			
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		
Marine Debris Threat Abatement Plan			
Objectives			
Contribute to long-term prevention of the incidence of marine debris	Y	Y	

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EPBC Act Part 13 statutory instrument	Applicable to:		
	Government	*Titleholder*	*Petroleum Activity*
Understand the scale of impacts from marine plastic and microplastic on key species, ecological communities and locations	Y	Y	Y
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 6-19: Assessment against relevant actions of the Marine Turtle Recovery Plan

Part 13 statutory instrument	Relevant action areas/objectives	Relevant actions	Evaluation	EPO, controls and PS
Marine Turtle Recovery Plan	Action Area A1: Maintain and improve efficacy of legal and management protection	Action: Manage anthropogenic activities to ensure marine turtles are not displaced from identified habitat critical to the survival	Refer to Sections 6.8.2 to 6.9.6 Not inconsistent assessment: The assessment of acoustic emissions, light emissions and potential vessel collisions has considered the potential impacts to marine turtles. Management of the Petroleum Activity will ensure that marine turtles are not displaced from identified habitat critical to the survival of marine turtles.	EPO 3, EPO 5, EPO 6, EPO 7 and EPO 11 C 3.2, C 5.1, C 5.4, C 6.1, C 7.1, C 11.2, C 11.4, C 11.5, and C 11.6. PS 3.2, PS 5.1, PS 5.4, , PS 6.1, PS 7.1, PS 11.2, PS 11.4, PS 11.5, and PS 11.6
		Action: Manage anthropogenic activities in biologically important areas to ensure that biologically important behaviour can continue	Refer to Sections 6.8.2 to 6.9.6 Not inconsistent assessment: The assessment of acoustic emissions, light emissions and potential vessel collisions has considered the potential impacts to marine turtles. Management of the Petroleum	EPO 3, EPO 5, EPO 6, EPO 7 and EPO 11 C 3.2, C 5.1, C 5.4, C 6.1, C 7.1, C 11.2, C 11.4, C 11.5, and C 11.6.

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Part 13 statutory instrument	Relevant action areas/objectives	Relevant actions	Evaluation	EPO, controls and PS
			Activity Program will ensure that biologically important behaviour can continue in BIAs.	PS 3.2, PS 5.1, PS 5.4, , PS 6.1, PS 7.1, PS 11.2, PS 11.4, PS 11.5, and PS 11.6
	Action Area A3: Reduce the impacts from marine debris	Action: Support the implementation of the Marine Debris Threat Abatement Plan Priority actions at stock level: Green Turtle North West Shelf (G-NWS) – Understand the threat posed to this stock by marine debris Loggerhead turtle Western Australia (LH-WA) – Determine the extent to which marine debris is impacting loggerhead turtles Flatback turtle-Pilbara (F-Pil) and hawksbill turtle Western Australia (H-WA) – no relevant actions	Refer Section 6.8.2 and 6.9.5 Not inconsistent assessment: The assessment of the accidental release of solid hazardous and non-hazardous wastes has considered the potential risks to marine turtles. Controls have been implemented to reduce the likelihood of accidental release of solid wastes for the duration of the Petroleum Activity.	EPO 3 and EPO 12 C 3.1, C 3.2, C 3.3, C 3.4, C 3.5, C 3.6, C 10.1, C 10.3, and C 12.1. PS 3.1, PS 3.2, PS 3.3, PS 3.4.1, PS 3.4.2, PS 3.5, PS 3.6, PS 10.1, PS 10.3.1, PS 10.3.2, and PS 12.1
	Action Area A4: Minimise chemical and terrestrial discharge	Action: Ensure spill risk strategies and response programs adequately include management for marine turtles and their habitats, particularly in reference to 'slow to recover habitats', e.g. nesting habitat, seagrass meadows or coral reefs Priority actions at stock level: G-NWS – Ensure spill risk strategies and response programs include management for turtles and their habitats LH-WA and F-Pil – Ensure 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 H-WA – No relevant actions	Refer Sections 6.8.6 and 6.9.6 Not inconsistent assessment: The assessment of accidental release of chemicals/hydrocarbons has considered the potential risks to marine turtles. Spill risk strategies and response program include management measures for turtles and their nesting habitats.	Refer Section 7.12
	Action Area A8: Minimise light pollution	Action: Artificial light within or adjacent to habitat critical to the survival of marine turtles will be	Refer Section 6.8.4 Not inconsistent assessment: The assessment of light emissions has	EPO 6, EPO 7

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Part 13 statutory instrument	Relevant action areas/objectives	Relevant actions	Evaluation	EPO, controls and PS
		managed such that marine turtles are not displaced from these habitats Priority actions at stock level: G-NWS – as above LH-WA – no relevant actions F-Pil and H-WA – Manage artificial light from onshore and offshore sources to ensure biologically important behaviours of nesting adults and emerging/dispersing hatchlings can continue	considered the potential impacts to green, and hawksbill turtles. Internesting, mating, foraging or migrating turtles are not impacted by light from offshore vessels. Vessel light emissions could cause localised and temporary behavioural disturbance to isolated transient individuals, which is unlikely to result in displacement of adult turtles from internesting or nesting habitat critical to the survival of marine turtles.	C 7.1 PS PS 7.1
	Action Area B3: Address information gaps to better facilitate the recovery of marine turtle stocks	Action: Understand the impacts of anthropogenic noise on marine turtle behaviour and biology Priority actions at stock level: G-NWS – Given this is a relatively accessible stock that is likely to be exposed to anthropogenic noise – Investigate the impacts of anthropogenic noise on turtle behaviour and biology and extrapolate findings from the NWS stock to other stocks LH-WA – no relevant actions F-Pil – no relevant actions H-WA – investigate mixed stock genetics at foraging grounds	Refer Sections 6.8.3 Not inconsistent assessment: The assessment of acoustic emissions has considered the potential impacts to marine turtles. Survey equipment and survey vessel acoustic emissions could cause localised and short- term behavioural disturbance to isolated transient individuals, which is unlikely to result in displacement of adult turtles from internesting or nesting habitat critical to the survival of marine turtles.	N/A
Assessment summary 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.				

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Table 6-20: Assessment against relevant actions of the Blue Whale Conservation Management Plan

Part 13 statutory instrument	Relevant action areas/objectives	Relevant actions	Evaluation	EPO, controls and PS
Blue Whale Conservation Management Plan	Action Area A.2: Assessing and addressing anthropogenic noise	Action 2: Assessing the effect of anthropogenic noise on blue whale behaviour Action 3: Anthropogenic noise in 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 6.8.3 Not inconsistent assessment: The assessment of acoustic emissions has considered the potential impacts to pygmy blue whales. Acoustic emissions from survey vessels will not cause injury to any pygmy blue whale. The Operational Area is within a pygmy blue whale possible foraging BIIA.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.	N/A
	Action Area A.4: Minimising vessel collisions	Action 3: Ensure the risk of vessel strikes on blue whales is considered when assessing actions that increase vessel traffic in areas where blue whales occur and, if required, appropriate mitigation measures are implemented	Refer Section 6.9.3 Not inconsistent assessment: 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 very slow vessel speeds.	EPO 5 C 5.1 PS 5.1
	Action Area B.3: Describing spatial and temporal distribution and defining biologically important habitat	Action 2: Identify migratory pathways between breeding and feeding grounds Action 3: Assess timing and residency within Biologically Important Areas	Not inconsistent assessment: Woodside contributes to Action Area B.3 via its support of targeted research initiatives (e.g. satellite tracking of pygmy blue whale migratory movements (Double et al. 2014).	N/A
Assessment summary 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 6-21: Assessment against relevant actions of the Grey Nurse Shark Recovery Plan

Part 13 statutory instrument	Relevant action areas/objectives	Relevant actions	Evaluation	EPO, controls and PS
Grey Nurse Shark Recovery Plan	Objective 7: Improve understanding of the threat of pollution and disease to the grey nurse shark	Action 7.1: Review and assess the potential threat of introduced species, pathogens and pollutants	Refer Sections 6.8.6, 6.9.5, 6.9.6 and 6.9.7. Not inconsistent assessment: This EP includes an assessment of the impacts from accidental release of solid wastes as well, planned discharges from vessels on and the impact of introducing invasive marine species on listed marine species.	N/A
			Refer Sections 6.9.3 and 6.9.6 Not inconsistent assessment: The assessment of accidental release of chemicals/hydrocarbons has considered the potential risks to grey nurse sharks.	Refer Section 7.12
Assessment summary 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 6-22: Assessment against relevant actions of the Sawfish and River Shark Recovery Plan

Part 13 statutory instrument	Relevant action areas/objectives	Relevant actions	Evaluation	EPO, controls and PS
Sawfish and River Shark Recovery Plan	Objective 5: Reduce and, where possible, eliminate adverse impacts of habitat degradation and modification on sawfish and river shark species	Action 5c: Identify risks to important sawfish and river shark habitat and measures needed to reduce those risks	Refer Sections 6.9.3 and 6.9.6. Not inconsistent assessment: The assessment of accidental release of chemicals/ hydrocarbons has considered the potential risks to sawfish and river shark.	Refer Section 7.12
	Objective 6: Reduce and, where possible, eliminate any adverse impacts of marine debris on sawfish and river shark species	Action 6a: Assess the impacts of marine debris including ghost nets, fishing gear and plastics on sawfish and river shark species	Refer Section 6.9.5 Not inconsistent assessment: The assessment of the accidental release of solid hazardous and non-hazardous wastes has considered the potential risks to sawfish.	N/A

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Part 13 statutory instrument	Relevant action areas/objectives	Relevant actions	Evaluation	EPO, controls and PS
			Controls have been implemented to reduce the likelihood of accidental release of solid wastes for the duration of the Petroleum Activity.	
Assessment summary The Sawfish and River 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 6-23: Assessment against relevant actions of the Marine Debris Threat Abatement Plan

Part 13 statutory instrument	Relevant action areas/objectives	Relevant actions	Evaluation	EPO, controls and PS
Marine Debris Threat Abatement Plan	Objective 2: Understand the scale of marine plastic and microplastic impact on key species, ecological communities and locations	Action 2.04: Build understanding related to plastic and microplastic pollution	Refer Section 6.9.5. Not inconsistent assessment: The assessment of the accidental release of solid hazardous and non-hazardous wastes has considered the potential risks to the marine environment. Controls have been implemented to reduce the likelihood of accidental release of solid wastes for the duration of the Petroleum Activity.	N/A
Assessment summary The Marine Debris Threat Abatement 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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6.11 Cultural features and heritage values assessment

The identification of cultural features and heritage values of the environment as well as the social, economic and cultural features important to Indigenous people is integral to understanding the environment and any potential impacts and risks to the environment. In line with Woodside's Indigenous Communities Policy (Woodside 2025), Woodside seeks to avoid damage or disturbance to cultural heritage (including intangible heritage). If avoidance is not possible, Woodside will seek to minimise and mitigate any impacts, through consultation with Indigenous communities and Traditional Custodians.

Mitigation of intangible heritage can include any measure or control aimed at ensuring the viability of the cultural heritage and its intergenerational transmission. This can include reducing impacts and risks to environmental features that are associated with intangible cultural heritage (UNESCO, 2003; Australia ICOMOS, 2013).

Values and features of significance identified in Section 4.9 (Table 4-21) as being likely or possible to interact with the Operational Area or EMBA are addressed in the risk assessment below. Management of these risks ensures that Indigenous concerns and interests are adequately acknowledged and protected throughout the duration of the Petroleum Activity.

Any action in Australian waters that will or might interact with the seabed could impact UCH, as such, an adequate process of UCH assessment and management is to be undertaken ahead of, and concurrent with, any proposed actions in the near and offshore environment (DCCEEW 2024). The impact assessment below considers both Indigenous and historical UCH in order to protect its value for future generations.

Context		
Survey vessels- Section 3.8 Geotechnical Survey Activities – Section 3.7	Socio-economic environment- Section 4.9	Consultation – Section 5

Impact evaluation summary								
Source of impact (planned activities)	***Value potentially impacted***							
	Marine Mammals	Marine Reptiles	Fish	Seabirds	Coral	Benthic Habitats e.g. Seagrass	Shoreline Habitats e.g. Mangroves	Water Quality
	Impact Consequence level							
6.8.1 Physical presence: interaction with third party vessels	NA	NA	NA	NA	NA	NA	NA	NA
6.8.2 Physical presence: disturbance to seabed from geotechnical and geophysical surveys	NA	NA	NA	NA	NA	Localised and Low Level (E)	NA	NA
6.8.3 Routine acoustic emissions: Generation of noise from survey vessels and geophysical and geotechnical survey equipment	Slight (E)	Slight (E)	Slight (E)	NA	NA	NA	NA	NA

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6.8.4 Routine light emissions: external lighting on survey vessels	No lasting effect (F)	No lasting effect (F)	No lasting effect (F)	No lasting effect (F)	NA	NA	NA	NA
6.8.6 Routine and non-routine discharges to the marine environment: survey vessels	NA	NA	NA	NA	NA	NA	NA	No lasting effect (F)

Source of Risk (unplanned activities)	Marine Mammals	Marine Reptiles	Fish	Seabirds	Coral	Benthic Habitats e.g. Seagrass	Shoreline Habitats e.g. Mangroves	Water Quality
	Risk Rating							
6.9.2 Unplanned hydrocarbon release: Vessel collision	Moderate	Moderate	Moderate	Low	Low	Low	NA	Low
6.9.3 Physical presence: Interaction with marine fauna	Low	Low	Low	NA	NA	NA	NA	NA
6.9.4 Physical presence: Disturbance to seabed from dropped objects and equipment loss	NA	NA	NA	NA	NA	Low	NA	NA
6.9.5 Unplanned discharges: Loss of solid hazardous and non-hazardous wastes	Moderate	Moderate	Moderate	Moderate	NA	NA	NA	Moderate
6.9.6 Unplanned discharges: Deck and subsea spills from geotechnical and geophysical equipment	Moderate	Moderate	Moderate	Moderate	NA	NA	NA	Low

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6.9.7 Physical presence: Introduction of invasive marine species	NA	NA	NA	NA	Low	NA	NA	NA

Detailed impact and risk assessment

The Petroleum Activity have the potential to impact cultural features and heritage values identified in Table 4-21 in the following ways.

Archaeological heritage and landscapes

Places that are identified in Section 4.9 for their value as archaeological sites are assumed to be at risk where there is potential for impact to the tangible or scientific elements of that place. This could include physical damage or disturbance to the archaeological integrity of a place.

Coastal/island archaeological sites (fish traps and middens)

No coastal areas or islands are present within the Operational Area. A review of the DPLH's Aboriginal Heritage Inquiry System identified 0 Registered Heritage Places and 0 Lodged Aboriginal sites within the EMBA.

Submerged cultural heritage (Historic and Indigenous)

The Operational Area does not overlap the submerged landscape, which is defined as the area from the WA coast to the Ancient Coastline at 125 m Depth Contour KEF. The submerged landscape is also considered to comprise potentially culturally significant landscapes and landscape features such as submerged hills, karst depressions/ravines and valleys between submerged ridges and submerged calcarenite ridges/paleo beach barrier systems. This area has been identified as having the potential for Indigenous archaeological heritage material to exist on the seabed. No archaeological sites have been identified beyond terrestrial or intertidal areas, with the exception of two sites at Murujuga in Cape Bruguieres channel and Flying Foam Passage (Benjamin et al. 2020; Benjamin et al 2023), which are outside of the EMBA. Nevertheless, cultural heritage values may exist on the seabed, these include ship and aircraft wrecks.

All actions involving seabed contact, and most actions undertaken in proximity to the seabed, have potential to cause adverse impact to UCH if present (DCCEEW 2024). Planned activities include may result in seabed contact. Woodside therefore engages a qualified consultant to undertake a desktop assessment of the potential for submerged archaeological material in areas that have not been subject to previous disturbance, using available geophysical and bathymetric data. This approach is consistent with Assessing and Managing Impacts to Underwater Cultural Heritage in Australian Waters (DCCEEW 2024). Woodside undertook an UCH assessment of the proposed broader Browse Project area (Wessex Archaeology, 2025). The report confirmed that the Operational area was not connected to the mainland submerged continental shelf of Ancient Australia. The assessment also determined that there was no evidence of historic maritime archaeology in the assessed area.

The report also assessed intangible knowledge associated with the reef. No direct intangible knowledge of values associated with Scott Reef has been documented in literature, nevertheless, environmental values associated with Sea Country such as turtles, that are inherently associated with Scott Reef were acknowledged. These values are assessed in the marine ecosystems and species section below and in relevant assessments in Sections 6.8 and 6.9. Known submerged heritage, including archaeological sites, may be protected subject to declarations under the Aboriginal and Torres Strait Islander Heritage Protection Act 1984, Underwater Cultural Heritage Act 2018 or EPBC Act 1999. Submerged archaeological sites (locations undefined) may exist on the Submerged Landscape within the broader EMBA. However, given the EMBA is driven by an unplanned hydrocarbon release, it is not expected to impact the seabed or archaeological material on or within it. Therefore, there is no anticipated impact pathway to submerged archaeological sites in the broader EMBA from the Petroleum Activity

Woodside understands there is no Indigenous archaeology known to exist within the OAs and no areas subject to declarations or prescriptions under these Acts are located within the OAs. No submerged sites of significance within the OAs were identified by Traditional Custodians during consultation while preparing this EP. There is also no planned dredging or large-scale seabed disturbance. In the event that unidentified cultural heritage is encountered it will be managed in accordance with the Unexpected Finds Procedure detailed Section 7.2.3 and applicable legislative obligations.

Intangible heritage

Intangible values that are identified in Section 4.9 are assumed to be at risk where there is potential for impact to the spiritual connections, features and/or places associated with the value. Impacts to intangible heritage can be individualised; the assessment below does not account for this variability but aims to assess widespread impacts to general intangible values.

Cultural obligations to care for Country/Access to Country

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Potential impact pathways to the rights and obligations of Traditional Custodians to care for Sea Country may be directly associated with environmental impacts, or by excluding Traditional Custodians from Sea Country (e.g. by restricting access) or decision-making processes (e.g. by not conducting ongoing consultation). Restrictions on access may be temporary (e.g. where exclusion zones exist around activities for safety reasons) or permanent (e.g. where infrastructure obstructs access or navigation). Such impacts are limited to areas that have been traditionally accessed by Traditional Custodians and are expected to be concentrated in shoreline environments therefore not expected to result from the Petroleum Activity. If required, ongoing consultation is intended to facilitate access arrangements where feasibly safe to do so, and to support appropriately informed decision-making processes.

Creation/dreaming sites; ceremonial sites; sacred sites; ancestral beings

Activities that physically alter landscape features may be assumed to potentially impact values of creation/dreaming sites, sacred sites or ancestral beings. Activities that prevent the performance of ceremony at these sites will directly impact its values. This is anticipated to be focused on areas adjacent to the coast. There are no known creation or dreaming sites identified within the Operational Area during consultation or through publicly available literature. With consideration to the limited extent of the proposed activity, impacts to creation/dreaming or ceremonial sites are not expected.

Kinship systems and totemic species

Marine species may have kinship/totemic relationships to Traditional Custodians, but it is understood that these relationships do not prohibit people outside of that “skin group” from hunting or eating that same species (Juluwarlu 2004). It is therefore inferred that the management of totemic or kinship species applies at the species/population level and not to individual plants and animals. The impacts and risks associated with the Petroleum Activity are not considered to be ecologically significant at a population level. As such, cultural values associated with kinship systems and totemic species are expected to be maintained.

Resource collection

It is understood that resource collection and use of Sea Country is part of ongoing Indigenous culture in the Kimberley region. For example*, Bardi and Jawi people have always and continue to engage in shore fishing, collecting sea food from the intertidal zone, hunting odorr (dugong) and goorlil (turtle)* (DBCA 2022). Direct impact to communities using these resources will inherently occur when the resource disappears, is displaced or suffers a reduction in population. Therefore, marine species (as resources) will be impacted where there is an impact at the species/population level. However, the impacts and risks associated with the Petroleum Activity are not considered to be ecologically significant at a population level. As such, cultural values associated with resource collection are expected to be maintained.

Songlines

Songlines can become lost, fragmented, or broken when there is a loss of Country or forced removal from Country (Neale and Kelly 2020:30). Physical sites that have been identified as comprising a component of a songline are important to protect to prevent the fragmenting or breaking apart of songlines and loss of sacred cultural knowledge. It is noted that oil and gas infrastructure exists in many areas of the North West Shelf, and that songlines are still acknowledged and recognised. It is inferred that if there were to be any impacts to surviving songlines these would be significantly more likely to be described as qualitative (i.e. “weaken” a songline) rather than binary or absolute (i.e. destroy a songline).

Knowledge of Country/customary law and transfer of knowledge/ Connection to Country

Where people are displaced or disrupted (e.g., during colonisation) or where there is a loss of technical skills or environmental knowledge this may damage connection to Country (McDonald and Phillips, 2021). Direct impact to communities practicing traditional skills will inherently occur when relevant aspects of the environment disappear, are displaced or suffer a reduction in species population. Furthermore, limitations on access to sites or disruption/relocation of Indigenous communities may have implications for the preservation of Indigenous knowledge. Impacts and risks from the Petroleum Activity are not considered to be ecologically significant at a population level and hence are not expected to impact the value of marine species. It is therefore not expected that the Petroleum Activity will displace or disrupt a Traditional Custodians capacity to pass on knowledge related to marine species or knowledge related to traditional culture/ technical skills.

As outlined above, neither the literature reviewed nor the consultation undertaken identified any specific intangible cultural heritage values directly associated with Scott Reef. While no intangible cultural values have been attributed to the reef itself, through these sources it was identified that environmental values linked to Scott Reef including marine species and ecological features are known to hold cultural significance for Indigenous peoples. These values are discussed in detail in the section below, as well as in Sections 6.8 and 6.9, which describe the relevant environmental values, their cultural significance, and the measures adopted to avoid or minimise potential impacts.

Traditional Custodians maintain an ongoing connection to Sea Country through living cultural traditions, including the use of resources and the practice of cultural activities such as ceremonies and Dreaming stories. Woodside invites ongoing engagement with relevant Traditional Custodian groups to understand how this connection can remain uninterrupted during the Petroleum Activity. Further supported by the environmental management controls outlined in Sections 6.8 and 6.9, no adverse impacts to intangible cultural values associated with Sea Country are expected from the Petroleum Activity .

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Marine Ecosystems and Species

Marine ecosystems may hold both cultural and environmental value, with cultural and environmental values intrinsically linked (DCCEEW 2023; MAC 2022 as cited in Woodside 2023a). It necessarily follows that an impact to marine ecosystems has the potential to impact cultural features where the impact is detectable within Sea Country and the seascape which Traditional Custodians view, interact with or hold knowledge of.

Fresh hydrocarbons (i.e. typically in the vicinity of the release location) may have a higher potential to cause toxic effects when ingested, while weathered hydrocarbons are considered to be less likely to result in toxic effects. As such, the risk of hydrocarbon ingestion is low. The migration of culturally significant marine fauna (marine reptiles, fish and mammals) protracts through time and space (i.e. the entire population will not be within the EMBA), and as such, a spill from the loss of well integrity is unlikely to affect an entire population.

A worst-case hydrocarbon spill scenario has the potential to result in major long-term impacts to offshore marine fauna species, with consequence severity dependent on the actual timing, duration and extent of a spill in relation to species' migratory movements and distributions. Such an event has been assessed above as highly unlikely and relevant EPOs and its corresponding controls have been implemented to mitigate such a risk (See Section 6.9).There is potential for temporary or localised effects on cultural features and heritage values associated with affected environmental receptors; however, these impacts are not expected to result in the loss of heritage value, cultural practice, knowledge transmission, or cultural obligations at a broader cultural landscape or population scale.

Benthic habitats (coral, seagrass)

Through consultation and existing literature, Indigenous groups identified benthic habitats as valuable for their ecological values, including corals attracting fish and seagrass providing shelters for fauna, as well as an important habitat for dugongs. Additionally, coral and coral reef communities are valued by the Bardi and Jawi people as they provide sustenance and are culturally significant (DBCA 2022). .

As described in Section 6.9, an unplanned hydrocarbon release is unlikely to result in impacts on benthic habitats. As such, cultural values and intangible cultural heritage associated with benthic habitats are expected to be maintained.

Plankton

Through consultation and review of available literature (Section 4.9) Woodside understands that marine fauna such as plankton are culturally important to Traditional Custodians and may be affected by routine and non-routine emissions, light emissions, and unplanned hydrocarbon releases. 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.

As described in Sections 6.8 and 6.9, 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 significant proportions of the populations of the species, nor expected to 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 plankton are expected to be maintained.

Fish and crustaceans

Fish and crab and squid have been identified through consultation and existing literature as an important resource, particularly as food sources.. Direct impact to communities using these resources will inherently occur when the resource disappears, is displaced or suffers a reduction in population. Therefore, these species (as resources) are likely to be impacted where there is an impact at the species/population level.

Through consultation, fish (aarli) were identified as important agents in the management of the broader ecosystem for Indigenous groups within or adjacent to the EMBA. There are Thalu ceremonies associated with increasing fish stocks. It may be assumed that inter-generational transmission of cultural knowledge relating to fish may be impacted where changes to population or behaviour results in reduced sightings (e.g. through population decline). This transfer of knowledge may be integral to managing a group's intangible cultural heritage (UNESCO 2003). Intangible cultural heritage associated with fish, including inter-generational knowledge regarding fishing techniques and migratory patterns, can be managed by reducing impacts to fish in nearshore marine environments to which this cultural knowledge is intrinsically connected.

The potential impacts from the Petroleum Activity on fish and cephalopods are not considered to be ecologically significant at a population level. As such, cultural values and intangible cultural heritage associated with fish and cephalopods are expected to be maintained.

Marine Mammals (Whales, dolphins, esturine crocodiles and dugongs)

There are increase ceremonies/rituals for species of animals and plants important to Indigenous peoples, to enhance or maintain populations. Thalu are places where these increase ceremonies are performed. All mentions of active ceremonial sites in the reviewed literature were confined to onshore locations, though the values may extend offshore. For example, the Thalu relates to marine species populations. As Thalu ceremonies are performed to maintain and increase populations of marine species, it is inferred 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

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purpose so long as whales continue to migrate through Mermaid Sound. Reviewed literature (DBCA 2020) also includes information that is marked as information that cannot be copied, reproduced or used without consent. The values described in the literature are environmental in nature, apply to marine mammal behaviours at a population level and are managed through existing environmental controls.

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). Whale symbology expressed through stories, music, and dance can reflect a group's connections with the sea, as well as marine fauna, which then comprise a group's cultural values (Ardler 2021; Bursill et al. 2007; Cressey 1998). Whales also speak to a broader connection that exists between Indigenous people and their surrounding environment. Beyond mythology and symbolism, whales can be connected with various economic and social functions associated with everyday life. Cultural knowledge of whales, whale migration, behaviour and the related marine environment may all be important in ensuring the continuation of these socio-economic functions and other related activities that remain valuable to Indigenous people (Fijn 2021). No impacts to communities' ability to perform or transmit stories, music or dance are anticipated from the Petroleum Activity. Where timing or performance is linked to sighting or engaging with these species, impacts may occur where numbers or migration behaviours are impacted at a population level.

Indigenous groups have expressed interest about whale migratory routes and studies. Inter-generational transmission of cultural knowledge (including songlines) relating to marine mammals may be impacted where changes to population or behaviour at a population level results in reduced sightings (e.g. through population decline, changes to migration routes or changes to migration seasonality). This transfer of knowledge may be integral to managing a group's intangible cultural heritage (UNESCO 2003).

The potential impacts from the Petroleum Activity on marine mammals are not considered to be ecologically significant at a population level. As such, cultural values and intangible cultural heritage associated with marine mammals are expected to be maintained.

Marine reptiles (turtles)

Turtles and their eggs have been identified through consultation and existing literature as an important resource, particularly as food sources. Direct impact to communities using these resources will inherently occur when the resource disappears, is displaced or suffers a reduction in population. Therefore, these species (as resources) are likely to be impacted where there is an impact at the species/population level.

Through consultation and review of available literature (Section 4.9), Woodside understands that marine fauna such as turtles, are culturally important to Traditional Custodians, and may be affected by light emissions. 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.

Intangible cultural heritage may also include the transmission of cultural knowledge about marine reptiles, such as nesting areas, hunting areas and migratory patterns. Cultural knowledge may also be conveyed through stories, such as the turtle being trapped in the sea as a result of its greed for berries as recounted by Capewell (2020). Such cultural knowledge may be associated with various cultural functions and activities that support the social and economic life of a community (Fijn 2021). Indigenous groups have expressed an interest regarding turtle monitoring programs and migration patterns.

Activities that impact turtle populations and their marine environment may have an indirect impact on some Aboriginal communities as this can limit access to cultural sites or deplete hunting areas that would threaten local food security (Delisle et al. 2018:251). Inter-generational transmission of cultural knowledge (including songlines) relating to marine reptiles may be impacted where changes to population or behaviour 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).

The potential impacts from the Petroleum Activity on marine reptiles are not considered to be ecologically significant at a population level. As such, cultural values and intangible cultural heritage associated with marine reptiles are expected to be maintained.

Seabirds

Seabirds have been identified through literature as a culturally significant species (Malgana Aboriginal Corporation 2021), as well as a resource (seabird eggs; Smyth 2007). Direct impact to communities using these resources will inherently occur when the resource disappears, is displaced or suffers a reduction in population. Therefore, these species (as resources) are likely to be impacted where there is an impact at the species/population level. Intangible cultural heritage may also include the transmission of cultural knowledge about seabirds, such as nesting areas, hunting areas and migratory patterns. Such cultural knowledge may be associated with various cultural functions and activities that support the social and economic life of a community (Fijn 2021) Inter-generational transmission of cultural knowledge relating to seabirds may be impacted where changes to population or behaviour 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).

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The potential impacts from the Petroleum Activity on seabirds are not considered to be ecologically significant at a population level. As such, cultural values and intangible cultural heritage associated with seabirds are expected to be maintained.

Shoreline habitats (e.g. mangroves)

Through consultation, Indigenous peoples identified shoreline habitats as valuable for their ecological values, including mangroves for providing shelter to marine invertebrates, which are identified as resources, and a potential nursery for turtles. Literature also notes that mangroves are also valued for the flora and fauna they are associated with and support (DBCA, nd) There is no overlap between the Operational Area and mangrove habitat, and no planned impacts to mangroves from the Petroleum Activity. As such, cultural values and intangible cultural heritage associated with shoreline habitats are expected to be maintained.

Water Quality

Through consultation impacts to water quality 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)

Water quality would be affected in the offshore environment within the EMBA due to hydrocarbon contamination from entrained, dissolved and surface hydrocarbons. Due to the weathering processes of the hydrocarbons, impacts to water quality are anticipated to be minor long term and/or significant short term as a result of hydrocarbon contamination above background levels.

Given 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.

Conclusion

The potential impacts and risks from the Petroleum Activity are not considered to be ecologically significant at the population level. As such, impacts are not expected to result in the loss of heritage value, cultural practice, knowledge transmission, or cultural obligations at a broader cultural landscape or population scale. Refer to the impacts on intangible values assessment above.

The impact and risk assessment for cultural features and heritage values has therefore determined that the planned activities are unlikely to result in an impact greater than slight (E) and unplanned activities are assessed to have a residual risk rating of moderate (or lower). Woodside will continue to consider new heritage information as it becomes available.

Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[41]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
Legislation, codes and standards				
Report any potential UCH finds to relevant stakeholders and authorities in accordance with the Unexpected Finds Procedure, Underwater Cultural Heritage Act 2018 and the ATSIHP Act.	F: Yes. CS: Minimal.	Ensures workforce are suitably aware of legal and process requirements for managing cultural features and heritage values.	Benefits outweigh cost/sacrifice.	Yes C 4.4
Good practice				
Apply a 'living heritage'[42]	F: Yes.	A 'living heritage' approach	Benefits outweigh cost/sacrifice.	Yes

[41] *Qualitative measure*

[42] *'Living heritage' supports community and individual identity. Intangible cultural heritage is 'living heritage' that is inherited from ancestors and passed on to their descendants. It is comprised of many influences, including oral traditions, art, social practices, rituals and ceremonies, cultural knowledge and practices. It is transmitted from generation to generation and evolves in response to the environment. Woodside applies a 'living heritage' approach to its cultural heritage management. This approach invites Traditional Custodians to identify interests, transmit information and express concerns so they can be considered in the context of Woodside's*

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Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[41]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
management approach. Woodside engages with Traditional Custodians and seeks to incorporate cultural knowledge, where appropriate across activities. Cultural safety considerations are factored for our workforce and the Indigenous communities.	CS: Minimal cost.	acknowledges and respects Indigenous communities. It supports the transfer of cultural knowledge and is an effective strategy to manage intangible cultural values.		C 2.1
Project inductions to relevant personnel, before the individual starts the activity, will include information on cultural values and heritage, including tangible and intangible cultural heritage.	F: Yes. CS: Minimal cost.	Workforce is suitably aware of cultural values and heritage in the area they are operating.	Benefits outweigh cost/sacrifice.	Yes C 2.2
The environmental impacts and risks of the activity will continue to be managed to as low as reasonably practicable and an acceptable level for cultural features and heritage values.	F: Yes CS: Substantial costs	Implementation of activities and associated controls to ALARP and acceptable levels supports the maintenance of cultural features and heritage values	Benefits outweigh cost/sacrifice	Yes C 2.3
Use of cultural heritage monitors on vessels to oversee implementation of controls protecting cultural values	F: No CS: Not feasible	Primary Vessels are POB constrained with no ability to facilitate additional personnel	Benefits outweigh cost/sacrifice.	No
Review of existing survey data by a suitably qualified maritime archaeologist to inform areas for survey activities and/or installation of equipment that may cause seabed disturbance (in areas not previously disturbed) to avoid or where not possible, minimise physical impacts to	F: Yes. CS: Minimal cost. Standard practice.	Reduces the risk of damage or destruction of culturally significant underwater heritage, including Indigenous heritage values.	Benefits outweigh costs/sacrifice	Yes C 4.1

activities. Woodside works with Traditional Custodians to support and follow appropriate cultural protocols, including calling to Country, conducting smoking ceremonies (in areas where this custom is appropriate), and providing cultural awareness. Woodside will collaborate and provide relevant information it holds to groups such as Heritage Management Committees where they are established.

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Demonstration of ALARP				
Control considered	***Control feasibility (F) and cost/sacrifice (CS)[41]***	***Benefit in impact/risk reduction***	***Proportionality***	***Control adopted***
cultural heritage areas or prospective areas.				
Unexpected finds of potential Underwater Cultural Heritage sites/ features, including Indigenous UCH are managed in accordance with the Unexpected Finds Procedure.	F: Yes. CS: Minimal cost. Standard practice.	Reduces the risk of damage or destruction of culturally significant underwater heritage, including Indigenous heritage values.	Benefits outweigh costs/sacrifice	Yes C 4.2
Relevant personnel and ROV operators will be advised in an induction of the potential to encounter UCH, and of their requirement to follow the Unexpected Finds Procedure (C 3.2)	F: Yes. CS: Minimal cost. Standard practice.	Reduces the risk of damage or destruction of culturally significant underwater heritage, including Indigenous heritage values.	Benefits outweigh costs/sacrifice	Yes C 4.3
ALARP statement: On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A Section 2.3.4.2) and Woodside's criteria for demonstrating ALARP (Section 2.4.1), Woodside considers the adopted controls appropriate to manage the potential impacts and risks to cultural features and heritage values. As no reasonably practicable additional/alternative controls were identified that would further reduce the impacts without disproportionate sacrifice, the impacts are considered ALARP.				

Demonstration of acceptability
Acceptability statement: The impact and risk assessment has determined that, given the adopted controls, planned activities are unlikely to result in an impact greater than temporary localised impact not significant to areas or items of cultural significance with slight (E) and unplanned activities are assessed to have a residual risk rating of moderate (or lower). The Petroleum Activity and the EMBA are not expected to have a significant impact (e.g. changes in population levels) on MNES including marine fauna with a cultural connection with, or traditional use in nearshore areas. Woodside facilitates a process of undertaking desktop assessments by qualified professionals, using remote sensing techniques, to identify known or potential underwater cultural heritage where new seabed disturbance occurs and an unexpected finds procedure (refer to Section 7.2.3) will be implemented (C 4.2). Therefore, the activity is not inconsistent with Underwater Cultural Heritage Guidance for Offshore Developments and the Guidelines to assessing and managing impacts to Underwater Cultural Heritage in Australian waters under the UCH Act. As outlined in Section 6.11 and based on the EPOs considered below and the relevant adopted controls, planned activities proposed under the Petroleum Activity are not inconsistent with relevant heritage legislation, management plans and agreements under which these values are protected and conserved. In addition, Woodside has engaged with Traditional Custodians adjacent to the EMBA to understand the cultural features and heritage values that may occur and potential impacts from the activity. Woodside maintains a long-standing relationship, where established, with relevant Traditional Custodian groups, and undertakes consultation with those whose functions, interests or activities may be affected by activities conducted under this EP. In the event of an unplanned environmental impact, such as a hydrocarbon spill, Woodside will engage with relevant Indigenous groups within or adjacent to the EMBA in line with its First Strike Plan (Appendix H). Woodside will support Traditional Custodians to practice cultural obligations to care for Country by providing timely information on the incident, facilitating safe access to Sea Country where practicable, and incorporating Traditional Custodian knowledge and priorities into response, mitigation and recovery activities. For ongoing consultation post Regulation 25 consultation, Woodside supports ongoing engagement with Traditional Custodians. Woodside is committed to ongoing engagement and support to care for and manage Country, including

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Demonstration of acceptability
Sea Country. The 'living heritage' management approach (C 2.1) has been developed to enable Woodside to manage cultural values which may be identified at any time during Woodside's activities via ongoing dialogue with Traditional Custodians. Further opportunities to reduce the impacts have been investigated above. The potential impacts and risks are considered acceptable if the adopted controls are implemented. Therefore, Woodside considers the adopted controls appropriate to manage the impacts and risks to cultural features and heritage values to a level that is acceptable, if ALARP.

EPOs, EPSs and MC[43]			
EPOs	***C***	***PS***	***MC***
EPO 2a No adverse impact[44] to cultural features and heritage values from the Petroleum Activity. EPO 2b Woodside supports ongoing engagement and consultation with Traditional Custodians for the purpose of assessing and avoiding impacts to cultural features and heritage values.	C 2.1 Apply a 'living heritage' management approach. Woodside engages with Traditional Custodians and seeks to incorporate cultural knowledge, where appropriate across activities. Cultural safety considerations are factored for our workforce and the Indigenous community.	PS 2.1.1 Woodside will continue to invite Traditional Custodians to identify interests, transmit information and express concern through ongoing consultation, as identified in Section 7.10.	MC 2.1.1 Records demonstrate Change Management and Management of Knowledge processes have been followed where new controls or management measures are identified.
	C 2.2 Project inductions to relevant personnel, prior to the individual commencing the activity, will include information on cultural features and heritage values, including tangible and intangible cultural heritage	PS 2.1.2 Woodside will assess and, where deemed practicable, implement appropriate cultural protocols where requested by Traditional Custodians.	MC 2.1.2 Records demonstrate Woodside implemented cultural protocols as requested.
		PS 2.2 Relevant personnel have completed project inductions that include information on cultural values, including tangible and intangible cultural heritage for awareness.	MC 2.2 Records demonstrate relevant personnel have completed inductions that include cultural awareness.
	C 2.3 The environmental impacts and risks of the activity will continue to be managed to as low as reasonably practicable and an acceptable level for cultural features and heritage values.	PS 2.3.1 Consideration of cultural values/new information, through the life of the EP, and the development of avoidance or mitigation strategies in collaboration with Traditional Custodians if impacts to cultural values are identified. Where avoidance is not possible, impact minimisation will be prioritised and	MC 2.3.1 Records demonstrate Change Management and Management of Knowledge processes have been followed where new controls or management measures are identified (Section 7.8)

[43] As marine ecosystems may hold both cultural and environmental value (see Section 4.9), with cultural and environmental values intrinsically linked, in addition to the specific controls for cultural features and heritage values, the controls and performance standards in Sections 6.8 and 6.9 will reduce impacts to cultural features and heritage values including marine species and habitats.

[44] For the purposes of the Petroleum Activity, an adverse impact to cultural features or heritage values is considered to occur where there is: direct physical disturbance causing observable damage to a site or object of cultural significance; a measurable and significant decline in the population or habitat of a culturally significant species attributable to the surveys; or a substantiated impact on recognised intangible cultural values

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EPOs, EPSs and MC[43]			
EPOs	***C***	***PS***	***MC***
		demonstrated through a written options analysis/ALARP to ensure an acceptable level of impact. This will be documented through Woodside's Management of Change and Management of Knowledge processes.	
EPO 4 No adverse impact to Underwater Cultural Heritage without a permit.	C 4.1 Review of existing survey data by a suitably qualified maritime archaeologist to inform areas for survey activities and/or installation of equipment that may cause seabed disturbance (in areas not previously disturbed) to avoid or where not possible, minimise physical impacts to cultural heritage areas or prospective areas.	PS 4.1 Existing survey data reviewed by a suitably qualified maritime archaeologist to inform areas for seabed disturbance activities.	MC 4.1.1 Records demonstrate review of existing survey data completed prior to commencement of seabed disturbance activities.
	C 4.2 Unexpected finds of potential UCH sites/features, including Indigenous UCH are managed in accordance with the Unexpected Finds Procedure.	PS 4.2 In the event that an underwater cultural heritage site or feature is identified implement the Unexpected Finds Procedure.	MC 4.2.1 No non-compliance with the Unexpected Finds Procedure.
	C 4.3 Relevant personnel and ROV operators will be advised in an induction of the potential to encounter UCH, and of their requirement to implement (when necessary) the Unexpected Finds Procedure (C 4.2)	PS 4.3 Relevant personnel (includi ng ROV operators) understand their requirements to implement the Unexpected Finds Procedure (C 4.2) through an induction.	MC 4.3.1 Records demonstrate relevant personnel have undertaken UCH awareness training and are advised of their requirements to implement the Unexpected Find Procedure. Evidence of awareness is documented through signed declaration forms completed by the relevant personnel.
	C 4.4 Report any potential UCH finds to relevant stakeholders and authorities in accordance with the Unexpected Finds Procedure, Underwater Cultural Heritage Act 2018 and the ATSIHP Act	PS 4.4 Report any finds of potential UCH in accordance with the Unexpected Finds Procedure, including to Australasian Underwater Cultural Heritage Database via DCCEEW.	MC 4.4.1 Records demonstrate confirmed UCH finds have been reported to relevant authorities and stakeholders.

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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 1.7).

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. Document names and reference numbers may be subject to change during the statutory duration of this EP and is managed through a Change Register and update process.

7.2.1 Environmental Consideration during Selection, Assessment and Approval of Chemicals

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 Management Standard, which requires chemicals to be selected with the lowest practicable environmental impacts and risks, subject to technical constraints).

Chemicals proposed to be selected as part for the Petroleum Activity will be managed in accordance with the requirements set out by the Australian Government under the Industrial Chemicals Environmental Standard (IChEMS). The IChEMS is a key component of several National reforms to improve approaches to how industrial chemicals are used, produced, imported and managed. Industrial chemicals will be listed on the IChEMS Register in one of 7 schedules according to their environmental risk.

Chemicals proposed for selection in this activity will be assessed against those listed in the IChEMS register under one of the seven schedules according to their environmental risk. The selection and management of any chemical will adhere to the specific risk management measures, storage, use and handling requirements outlined in the corresponding schedule.

7.2.1.1 Environmental selection criteria

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 pipeline chemicals only.

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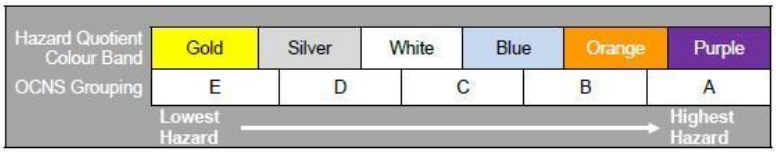


Figure 7-1: OCNS ranking scheme

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.

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 Mines, Petroleum and Exploration (DMPE) Chemical Assessment Guide: Environmental Risk Assessment of Chemicals used in WA Petroleum Activities Guideline.

Ecotoxicity

Chemical ecotoxicity is assessed using the criteria used by CEFAS to group chemicals based on ecotoxicity results (Table 6-1). 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: CEFAS 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 Scophthalmus maximus (juvenile turbot) LC50 toxicity tests; sediment toxicity refers to Corophium volutator LC50 test.

Biodegradation

The biodegradation of chemicals is assessed using the CEFAS biodegradation criteria, which align with the categorisation outlined in the DMPE 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.

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Chemicals with >60% biodegradation in 28 days to an OSPAR HOCNF accepted ready biodegradation protocol are considered acceptable in terms of biodegradation.

Bioaccumulation

The bioaccumulation of chemicals is assessed using the CEFAS bioaccumulation criteria, which align with the categorisation outlined in the DMPE 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.

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.

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.

7.2.2 Woodside invasive marine species risk assessment process

7.2.2.1 Objective and scope

To minimise the risk of introducing invasive marine species (IMS) as a result of the Petroleum Activity, all applicable vessels and relevant immersible equipment will be subject to Woodside's IMS risk assessment process (unless exempt as outlined below), in accordance with Woodside's Invasive Marine Species Management Plan (IMSMP).

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)[45]
- '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 (W-LSZ)[46]. Vessels, or immersible equipment are defined as locally sourced when the same supply

[45] 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.

[46] 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, but it excludes any government-declared Quarantine Areas (Quarantine Areas are defined below).

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facilities/port have been used since their last IMS inspection, full hull clean in dry dock or application of antifouling coating (AFC).

7.2.2.2 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 vessel, or 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 quality assurance/quality control (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.

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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.
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 dissembled between project sites, while a higher risk rating is applied where no routine cleaning occurs.

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 14 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 Woodside’s control, 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 that must be approved by the relevant Business Vice President and HSE Vice President.

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Where planned Woodside activities include interactions between a vessel and a Woodside offshore facility (including MODUs and Primary Installation Vessels) that will exceed 14 consecutive days the IMS translocation potential is required to be examined in additional detail. This would likely include additional engagement with a qualified and experienced IMS Inspector, to determine whether any additional management controls should be applied to manage the risk of IMS to Low.

Risk factors that may be further evaluated may include the age of the vessel's antifouling coating, last IMS inspection date, and vessel transit history. Management measures that may be implemented where potential risks have been identified include, but are not limited to, minimising operational time adjacent to the offshore facility, a more specific evaluation of the potential for IMS to be present on the vessel's hull, or an inspection by a qualified IMS Inspector.

Before they enter the Operational area, survey vessels and immersible equipment are required to be a low risk of introducing IMS.

7.2.3 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* (Cth) (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: 131 237) 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* (Cth) (ATSIHP Act).
- 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.

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7.2.4 Offshore Seabird Management Plan

Vessels will implement Woodside's Offshore Seabird Management Plan (SBMP), which aligns with recommendations in the National Light Pollution Guidelines for Wildlife (CoA 2023) (see C8.1 in Section 6.8.4). When implemented, the Offshore SBMP addresses seabird interaction reporting and management for offshore/inshore activities within the North West Marine Region, specifically where the activity is located within a nocturnal seabird species BIA.

The purpose of the Offshore SBMP is to manage interactions with seabirds offshore to ensure any impacts and risks are reduced to ALARP and an acceptable level. The plan also provides frontline workers with guidance to manage seabird interactions and potential impacts resulting from these interactions identified as occurring as a result of Woodside's activities, as demonstrated in Figure 7-2

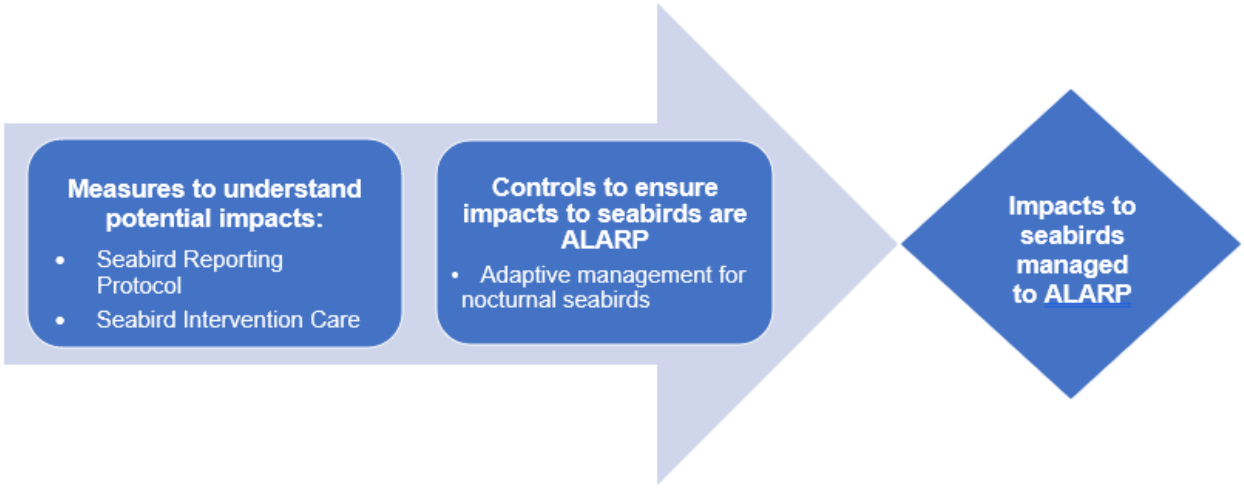


Figure 7-2: Schematic for SBMP to manage seabird impacts to ALARP and acceptable

The Offshore SBMP adaptive management framework has been established to manage the uncertainty of the potential impacts of artificial night at light on nocturnal seabirds and is applied when a Project is within a nocturnal seabird BIA and greater than 20 km from a known rookery. Where interactions with nocturnal seabirds are identified, adaptive management controls under the Offshore SBMP may be triggered in a tiered approach.

This may include an initial assessment of:

- Seabird species important habitat proximity, life cycle seasonality and periods of heightened sensitivity such as fledgling exodus.
- Overlap of seabird interactions and inclement weather (for example, post-cyclonic metocean conditions are known to increase seabird groundings).

And the consideration of controls and mitigation actions, for example:

- Extinguish outdoor/deck lights not necessary for safety and navigation at night.
- Use of block-out-blinds on portholes and windows not necessary for safety and/or navigation.

The Offshore SBMP will be available on board vessels during the petroleum activity. MODU and vessel crew will be made aware of the Offshore SBMP through the campaign environment induction. This induction will include the requirement to report seabird sightings to the offshore HSE advisors on the MODU and the onshore Woodside Environment Advisor. The Offshore SBMP will be implemented by frontline personnel with support from Woodside activity focused Environmental Advisors, the Science team and a dedicated seabird subject matter expert.

7.2.5 Pygmy Blue Whale Adaptive Management

Survey vessels will implement adaptive management measures in the form of pre start observations and shutdown procedures for DP operations and the use of geophysical equipment to achieve the EPO 5 'No injury of, or mortality to, EPBC Act (Cth) and BC Act (WA) listed marine fauna as a result of noise generated

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by the Petroleum Activity.' and specifically the *Conservation Management Plan for the Blue Whale, Management Action A.2.3: Anthropogenic noise in BIAs will be managed such that any blue whale continues to utilise the area without injury, and is not displaced from a foraging area*.

Therefore, the objectives of the adaptive management are to:

- prevent TTS, defined as injury, for pygmy blue whales; and
- limit noise disturbance (e.g. manage the introduction of noise emissions in the area) to as low as practicable and acceptable levels to prevent displacement from the possible foraging BIA

The adaptive management procedures will apply to locations within the Operational Area where noise modelling indicates the PBW possible foraging BIA may be ensonified above the cetacean behavioural response threshold.

These measures will be implemented during both daytime and nighttime as required, with infrared goggles utilised for observations during nighttime operations.

A conservative approach has been taken and the adaptive management procedure will apply to all whales as described in the subsequent subsections.

7.2.5.1 DP operations

For DP operations, adaptive management will be implemented through a staged process that manages the introduction of underwater noise and reduces the potential for pygmy blue whale disturbance or injury. The process requires trained crew to confirm whether pre-start observations are required for the relevant vessel/activity scenario, complete the applicable observation period before DP commences, and only proceed where no whales are observed within the relevant observation zone (or to the limits of visibility) for a period of 30 minutes.

Where a shutdown zone applies, trained crew will continue monitoring once DP has commenced and will implement the required response if a whale enters the zone, subject to vessel safety and practicability. The scenario-specific observation zones, shutdown requirements and seasonal controls are set out in Table 7-4.

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Table 7-4 Scenario-specific observation zones, shutdown requirements and seasonal controls for all vessels

Scenario		Behavioural response 120 SPL 1 Rmax (km)	TTS-SEL24h Rmax (km)	PTS/AINJ-SEL24h Rmax (km)	Pre-start Observation Zones (based on modelled maximum horizontal distance to behavioural response as predicted by modelling)	Shut down zones (based on TTS thresholds for VLF whales as predicted by modelling)	Peak Season Avoidance (constrained by a maximum three-month avoidance period)
A	Multipurpose vessel or USV under transit (not under DP)	0.21	0.06	-	**Not applicable** Behavioural response is localised to 210 m and TTS / PTS unlikely as whale would have to stay within 60 m of the vessel for 24 hours.		N/A due to very localised area of potential disturbance
B	Geotechnical drilling vessel under DP	3.61	0.98	0.10	30 minutes out to a distance of 3.7 km (or to the limit of visibility if conditions prohibit observations to 3.7 km) prior to starting DP operations	**Not applicable** Shut down not feasible due to safety considerations (e.g. DP required for drilling and supply vessel alongside requires DP)	Yes, due to increased area of potential impact and inability to shut down
C	Geotechnical drilling vessel under DP with an OSV resupply	7.93	1.12	0.12	30 minutes out to a distance of 8 km (or to the limit of visibility if conditions prohibit observations to 8 km) prior to second vessel commencing DP operations		
D	Multipurpose vessel or USV under DP	3.14	0.67	0.09	30 minutes out to distance of 3.2 km (or to the limit of visibility if conditions prohibit observations to 3.2 km) prior to starting DP operations	Shut down zone of 700 m Minimum 700 m separation distance to be maintained between vessel and whales; or vessel will reduce thrusters to as low as safely possible	**Not applicable** DP unlikely to be required and will be only for short durations; noting prestart delays and shut down zones will be applied to meet the EPO.

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Scenario		Behavioural response 120 SPL 1 Rmax (km)	TTS-SEL24h Rmax (km)	PTS/AINJ-SEL24h Rmax (km)	Pre-start Observation Zones (based on modelled maximum horizontal distance to behavioural response as predicted by modelling)	Shut down zones (based on TTS thresholds for VLF whales as predicted by modelling)	Peak Season Avoidance (constrained by a maximum three-month avoidance period)
E	Multipurpose vessel under DP with an OSV resupply	Not modelled – Scenario C used as a conservative surrogate			30 minutes out to a distance of 8 km (or to the limit of visibility if conditions prohibit observations to 8 km) prior to second vessel commencing DP operations	**Not applicable** Shut down not feasible due to safety considerations during resupply	**Not applicable** Resupply will be of short duration: typically, only 12 hours only for short durations; noting prestart observations will be implemented prior to resupply operations.

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7.2.5.2 Geophysical survey equipment

Pre start observations will be undertaken during geophysical surveys prior to startup of Boomer and Sparker SBP equipment as follows:

- Monitor for whales 30 minutes prior to commencing startup within an Observation Zone of 150 m from the vessel.
- Proceed with startup only when no whales have been sighted within the Observation Zone over the 30-minute monitoring period.

Shutdown procedures will be implemented during geophysical surveys using Boomer and Sparker SBP equipment as follows:

- Once equipment is started up, monitor for whales within Shutdown Zone (150 m) and if a whale is sighted, power down to lowest possible setting or shut down completely.

Restart can continue if no whales are observed for 30 min within the Shutdown Zone or whales are observed leaving the Shutdown Zone

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 7-5. Roles and responsibilities for oil spill preparation and response are outlined in the Oil Pollution First Strike Plan (Appendix G) and the Woodside Incident Management Handbook.

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 7-5: Roles and responsibilities

Title (role)	Environmental responsibilities
Office-based personnel	
Woodside Survey Operations Project Manager	Verify relevant Environmental Approvals for the activities exist before commencing activity. Monitor and manage the activity so it is performed as per the relevant standards and commitments in this EP. Notify the Woodside Environment Adviser in a timely manner of any scope changes. Liaise with regulatory authorities as required. Review this EP as necessary and manage change requests. Ensure all project and support vessel crew members complete a Project (Including HSE) induction. Verify that contractors meet environmental related contractual obligations. Liaise with contractors to ensure communication and understanding of environment requirements as outlined in this EP. Confirm environmental incident reporting meets regulatory requirements (as outlined in this EP) and Woodside's HSE Reporting and Investigation Procedure. Monitor and close out corrective actions identified during environmental monitoring or audits. Track compliance with performance outcomes and performance standards as per the requirements of this EP.
Woodside Environmental Adviser	Prepare environmental component of relevant Induction Package. Review compliance with performance outcomes and performance standards as per the requirements of this EP. Ensure relevant Environmental Approvals for the activities exist before commencing activity. Input to environmental component of relevant Induction Package. Assist with the review, investigation and reporting of environmental incidents as required. Assist environmental monitoring and inspections/audits are performed as per the requirements of this EP as required.

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Title (role)	Environmental responsibilities
	Liaise with relevant regulatory authorities as required. Assist in preparing required external regulatory reports, in line with environmental approval requirements and Woodside incident reporting procedures. Provide advice to relevant Woodside personnel and contractors to help them understand their environment responsibilities. Support the Survey Operations Project Manager in ensuring communications and understanding of environment requirements as outlined in this EP. Provide environmental support for activities through regular engagement with the Woodside Site Representative.
Woodside Corporate Affairs Adviser	Prepare and implement the Consultation Plan for the Petroleum Activity. Report on consultation. Continuously liaise and provide notification as required as outlined in the EP.
Woodside Marine Assurance Superintendent	Source and conduct relevant audit and inspection to confirm vessels comply with relevant Marine Orders and Woodside Marine Charters Instructions requirements.
Woodside Corporate Incident Management Team (CIMT) Incident Commander	On receiving notification of an incident: • establish and take control of the Incident Management Team and establish an appropriate command structure for the incident • assess the situation, identify risks and actions to minimise the risk • communicate impact, risk and progress to the Crisis Management Team and stakeholders • develop the Incident Action Plan (IAP) including objectives for action • approve, implement and manage the IAP • communicate within and beyond the incident management structure • manage and review safety of responders • address the broader public safety considerations conclude and review activities.
Vessel-based personnel	
Vessel Master	Ensure the vessel management system and procedures are implemented. Ensure personnel commencing work on the vessel receive an environmental induction that meets the relevant requirements specified in this EP. Ensure personnel are competent to perform the work they have been assigned. Verify SOPEP drills are conducted as per the vessel's schedule. Ensure the vessel Emergency Response Team has been given sufficient training to implement the SOPEP. Ensure any environmental incidents or breaches of relevant EPOs or PSs detailed in this EP, are reported immediately to the Party Chief and Woodside Site Representative. Ensure corrective actions for incidents or breaches are developed, communicated to the Woodside Site Representative, and tracked to closeout in a timely manner. Ensure closeout of actions is communicated to the Woodside Site Representative.
Party Chief/ Manager	Understand and manage environmental aspects of the survey operations per this EP and approval conditions. Provide copies of documents, records, reports and certifications (as requested by Woodside) in a timely manner to assist in compliance reporting. Ensure any environmental incidents or breaches of EPOs or PSs detailed in this EP, are reported immediately to the Woodside Site Representative and Woodside Survey Operations Project Manager.
Woodside Site Representative	Ensure project personnel adhere to the requirements of this EP so the EPOs are met, and the PSs detailed in this EP are implemented during survey operations. Ensure environmental incidents or breaches of outcomes or standards are reported as per the Woodside event notification requirements. Corrective actions for incidents and breaches must be developed, tracked and closed out in a timely manner.

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Title (role)	Environmental responsibilities
	Ensure periodic environmental inspections are completed. Monitor and close out corrective actions (Environmental Compliance Action Register) identified during environmental monitoring or audits/inspections. Ensure any environmental incidents or breaches of EPOs or PSs detailed in this EP, are reported immediately to the Woodside Survey Operations Project Manager. Review contractors' procedures, input into Toolbox Talks and JSAs. Provide environmental support for activities through regular engagement with Woodside Environmental Adviser.

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.
- MFO training for trained crew performing observation requirements.

7.4.3 Petroleum Activity-specific environmental awareness

Before commencing the survey 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.

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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 survey 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 Survey vessel activities

The following internal auditing will be performed for the Petroleum Activity:

- 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 Petroleum Activity above scopes will be audited by Woodside.
- At least one operational compliance audit relevant to applicable EP commitments will be conducted by a Woodside Environment Adviser for the 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.
- 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.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.

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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 Offshore Vessel Assurance Standard. 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:

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- 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 HSE Event Reporting and Investigations Work Instruction 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 relevant Environment teams, regular reviews of the effectiveness of the EP Implementation Strategy are undertaken at a frequency commensurate with activity duration and risk. This review may consider:

- Geophysical and geotechnical survey key performance indicators (KPIs)
- Effectiveness of tools and systems to monitor environmental performance
- Lessons learned from implementation during previous campaigns or activities
- Reviews of oil spill arrangements and testing performed in accordance with this EP.

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Within each Asset, Project team or Business Unit, managers review environmental performance regularly, usually though incident and event reporting and monthly HSE reports. The outcome of such reviews will inform whether further action is required to address key or recurring environmental performance matters.

7.5.4.2 Learning and knowledge sharing

Learning and knowledge sharing occurs via several different methods including:

- event investigations
- event bulletins
- 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 recommencing 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 Management of Change (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 Regulatory Compliance Our Expectations).

A management of knowledge tracker is maintained to record reviews and updates. Communication of relevant new knowledge is addressed at the EP regular cross team environment 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 Operational and Scientific Monitoring Program, 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 Biodiversity and Science Team and tracked via the Corporate Environment Baseline Database.

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7.7 Management of newly identified impacts and risks

New sources of receptor based impacts and risks identified through monitoring and auditing systems and tools and the Woodside Environment Knowledge Management System are assessed using the Change Management Process.

7.8 Management of change and revision

7.8.1 Environment Plan 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.

7.8.2 Oil Pollution Emergency Plan 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 Regulations 38 and 39 to determine if EP, including OPEP, resubmission is required. 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.

7.9 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.

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Record keeping will be in accordance with Regulation 22(6) that addresses maintaining records of emissions and discharges.

7.10 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 supports ongoing engagement with Traditional Custodians, which complies with Woodside policies, strategies and procedures and is directly informed by feedback from Traditional Custodians.

It provides a mechanism for ongoing dialogue so Traditional Custodians can, on an ongoing basis, provide Woodside with feedback relating to the Petroleum Activity and in relation to caring for and managing Country, including Sea Country. The approach 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, activities as part of ongoing consultation regarding the activity are planned with Traditional Custodians. 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 **7-6**. However, a framework agreement may still be initiated by these groups at any time.

Table 7-6: Ongoing consultation engagements

Report/ information	Recipient	Purpose	Frequency	Content
Notification (Email)	NOPSEMA	Standard practice per regulation	At least 10 days prior to commencement and following completion of activities.	Start and end of activity.

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Report/ information	Recipient	Purpose	Frequency	Content
Notification (Email)	DMPE	Standard practice	At least 10 days prior to commencement and following completion of activities.	Start and end of activity.
Notification (Email)	AFMA CFA DPIRD DAFF−Fisheries WAFIC Recfishwest North West Slope Trawl Fishery licence holders	Standard practice	At least 10 days prior to commencement and following completion of activities.	PS 1.5 (Section 6.8.1). Date of activity start and end.
Notification (email)	AHO	As requested by AMSA and AHO during consultation	AHO will be notified of activities no less than four weeks prior to the commencement of the first activity, and then subsequently when vessels are undertaking activities within the Operational Area for more than three weeks at a time	PS 1.3 (Section 6.8.1) Date of activity start.
Updates (email)			As required	Changes to planned activities
Notification (email)	AMSA	As requested by AMSA during consultation	At least 24–48 hours prior to commencement of activities.	PS 1.4 (Section 6.8.1) Date of activity start.
Updates (email)			Provide updates to the AHO and JRCC should there be changes to the activity.	Changes to planned activities.
Notification of significant change (email)	All relevant persons	Standard practice (when notification of significant change is needed)	As needed.	Notification of significant change.
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 (Section7.6) and Management of Change Process (refer to Section 7.8).
Notification (email)	Australasian Underwater	Report any unexpected finds of	If triggered by Unexpected Finds	Refer to Unexpected Finds Procedure (Section 7.2.3 and C 4.2, 4.3.

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Report/ information	Recipient	Purpose	Frequency	Content
	Cultural Heritage Database Any other stakeholders as required in the Unexpected Finds Procedure (Section 7.2.3)	potential Underwater Cultural Heritage	Procedure (Section 7.2.3).	
Various forms of engagement including but not limited to emails, phone calls and meetings.	Relevant cultural authorities who provide information to Woodside following submission.	Identification, assessment and consideration of cultural values relevant to the Petroleum Activity.	When engaged or as appropriate.	Relevant new information on cultural values received by Woodside will be assessed using the EP Management of Knowledge (Section 7.6) and Management of Change Process (refer to Section 7.8).

7.11 Reporting

To meet the EPOs and EPSs outlined in this EP, Woodside reports at a number of levels, as outlined in the next sections.

7.11.1 Routine reporting (internal)

7.11.1.1 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 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.

7.11.1.2 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.

7.11.2 Routine reporting (external)

7.11.2.1 Start and end notifications of the Petroleum Activity

In accordance with Regulation 54 of the Environment Regulations, 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.

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7.11.2.2 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 7-7.

Table 7-7: 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) (Refer 7.11.4.2)
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))	• Compliance with EPOs, and EPSs outlined in this EP, in accordance with the Environment Regulations • Decommissioning progress update

7.11.2.3 End of the Environment Plan

The EP will end when Woodside notifies NOPSEMA that the Petroleum Activity has ended and all of the obligations identified in this EP are complete, and NOPSEMA has accepted the notification, in accordance with Regulation 46 of the Environment Regulations.

7.11.3 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 HSE Event Reporting and Investigations Work Instruction and this section of this EP.

7.11.4 Incident reporting (external) – Reportable and recordable

7.11.4.1 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)
  - 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 Moderate (C) or above 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 (2026) 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.

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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 (NOPTA) and the department of the responsible State Minister (DMPE) 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 NOPTA and DMPE, within 7 days of the written report being provided to NOPSEMA.

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.

7.11.4.2 Recordable incidents

Definition

A recordable incident as defined under Regulation 5 of the Environment Regulations is a breach of an EPO or EPS relating to an activity (for which there is an environment plan in force), that is not a reportable incident.

Notification

NOPSEMA will be notified of all recordable incidents, according to the requirements of Regulation 50(2)(b) of the Environment Regulations, 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 titleholder 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 stop, control or remedy the recordable incident
- the action that has been taken, or is proposed to be taken, to prevent a similar incident occurring in the future.

7.11.4.3 Other external incident reporting requirements

In addition to the notification and reporting of environmental incidents defined under the Environment Regulations and Woodside requirements, Table 7-8 describes the incident reporting requirements that also apply in the Operational Area.

The pollution activities that should also be reported to AMSA via Joint Rescue Coordination Centre (JRCC) 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.

Appendix HExternal 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.

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In the unlikely event of a spill, Woodside will notify appropriate cultural authorities, other agencies and organisations as appropriate to the nature and scale of the incident as per procedures and contact lists in the Hydrocarbon Spill Australia Regulatory Framework[47] and the Oil Pollution First Strike Plan (Appendix H).

[47] In accordance with Regulation 56 of the Environmental Regulations, references to the Hydrocarbon Spill Australia Regulatory Framework within this document refer to the version submitted with the accepted North West Shelf Phase 1 Plug and Abandonment and TPA03 Well Intervention Environment Plan, which is available on NOPSEMA's website using the following link: https://docs.nopsema.gov.au/A1282743

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Table 7-8: External incident reporting requirements

Event	Responsibility	Notifiable party	Notification requirements	Contact	Contact detail
Any marine incidents during Petroleum Activity	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	reports@amsa.gov.au
Oil pollution incidents in Commonwealth waters	Vessel Master	AMSA Joint Rescue Coordination Centre (JRCC)	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 JRCC 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 *Protection of the Sea (Prevention of Pollution from Ships) Act 1983* (Cth), part II, section 11(1), AMSA JRCC 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	JRCC 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
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: protected.species@environment.gov.au
Within 2 hours of becoming aware of a marine pollution incident	Corporate Incident Management	Department of Transport and Major	Verbally notify DTMI's Maritime Environmental Emergency Response Unit (DTMI MEER) Duty Officer that a spill has	DTMI MEER Duty Officer	Phone: 08 9480 9924

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Event	Responsibility	Notifiable party	Notification requirements	Contact	Contact detail
(MOP) that occurs in or may impact state waters	Team (CIMT IC) or delegate	Infrastructure (DTMI)	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, DTMI to be notified if spill is likely to extend into WA State waters. Request DTMI to provide Liaison to Woodside Incident Management Team (IMT).		

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7.12 Emergency preparedness and response

7.12.1 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 7-9 summarises how this EP and supporting documents address the various requirements of Environment Regulations relating to oil pollution response arrangements.

Table 7-9: 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), 21(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[47] 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 6.9.1 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(10)	Oil Spill Preparedness and Response Mitigation Assessment (Appendix G).
Demonstrates that response arrangements in the oil pollution emergency plan are consistent with the national system for oil pollution preparedness and response	Regulation 22(11)	Hydrocarbon Spill Australia Regulatory Framework[47]

7.12.2 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 7-10).

Table 7-10: Emergency response training requirements

IMT position	Minimum competency
Corporate Incident Management Team (CIMT) Incident Commander and Deputy Incident Commander	• IMT Fundamentals Course (internal course) or equivalent • ICS 100/200 • IMO3 or equivalent spill response specialist level with an oil spill response organisation (OSRO)

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IMT position	Minimum competency
	• Participation in L2 activation, exercise or skills maintenance
Operations, Planning, Logistics and Finance Sections, and other rostered members of the CIMT	• IMT Fundamentals Course or equivalent • ICS 100/200 • Oil spill theory • Participation in L2 activation, exercise or skills maintenance
Environment Unit Leader	• IMT Fundamentals Course • ICS 100/200 • IMO2 or equivalent spill response specialist level with an OSRO • Participation in L2 activation, exercise or skills maintenance
Note on competency/equivalency	
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. The revised IMT Fundamentals training Program was developed in alignment with the performance requirements of the PMAOMIR320 – Manage Incident Response Information and PMAOM0R418 – Coordinate Incident Response. 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. In addition to incident management fundamentals 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) and face-to-face training. Woodside Learning Services is responsible for collating and maintaining personnel training records. The Crisis and Emergency Management Dashboard reflects the competencies required for each IMT and operational spill response roles.	

7.12.3 Emergency response preparation

The Emergency Operations Centre (EOC), based in Woodside's head office in Perth, is the onshore coordination point for a Level 2 offshore incident, and the location for the CIMT during an incident. The EOC is staffed by an appropriately skilled team available on call 24 hours a day. This team coordinates incidents that have the potential to impact people, environment, assets, company reputation and livelihood (PEARL), and liaises with external agencies where relevant. Woodside's Incident Command Structure is included in the Oil Pollution First Strike Plan Appendix H and response arrangements are further detailed in the Hydrocarbon Spill Australia Regulatory Framework[47]. Roles and responsibilities for emergency response are detailed in the Woodside Incident Management Handbook.

Woodside will have Emergency Response Plan Bridging Document (ERPBD) in place for project activities which bridges between Woodside's emergency response arrangements and those of the contractor.

In a vessel-based emergency, the Vessel Master will assume overall onsite command and act as the Incident Commander. All persons aboard the vessel will be required to act under the Incident Commander'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 via the Woodside Communication Centre, if requested by the Incident Commander. The vessels will have onboard equipment for responding to emergencies, including medical, firefighting and hydrocarbon spill response equipment.

7.12.4 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[47], supported by the Petroleum Activity Oil Pollution First Strike Plan (Appendix H) which provides tactical response guidance to the activity/area, cover spill response for the Petroleum Activity.

The Hydrocarbon Spill Preparedness Team manages Woodside's hydrocarbon spill response equipment stockpile. Woodside also maintains a suite of contracts for access to additional specialist response

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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 shipboard 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 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.

7.12.5 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.

7.12.6 Emergency and spill response drills and exercises

Woodside's capability to respond to incidents will be tested periodically, in accordance with the Crisis and Emergency Management Training, Drill and Exercise Standard. The scope, frequency and objective of these tests is described in Table 7-11. 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 crisis and emergency 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, IMT interfaces, 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 7-11: Testing of response capability

Response category	Scope	Response testing frequency	Response testing objective
Level 1 Response	Drills are project-/ activity-specific	At least one Level 1 'First Strike' drill must be conducted for each vessel during an activity, where the vessel will be present for greater than two weeks cumulatively. This drill should be undertaken as soon as practicable after commencing activities within the Operational Area. For campaign vessels with an operational duration of greater than one month, the Level 1 drill will occur within the first two weeks of	Drills test elements of the Oil Pollution First Strike Plan (Appendix H)

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		commencing the activity and then at least every six-month hire period thereafter. If vessel moves activity/ EP but stays on-hire to or working for Woodside, Level 1 does not need to be repeated if last drill was conducted within 6 months; unless Woodside Environment Adviser stipulates another drill is required, due to change in risk profile between activities).	
Level 2 Response	Exercises are vessel-specific	Level 2 exercises will be carried out in accordance with Crisis and Emergency Management Training Drill and Exercise Standard. The CEM team manages the CIMT's capability and competency requirements, and theme exercises and training based on current and emerging risks per year. These Level 2 exercises may opportunistically involve vessels in the field carrying out the project activity. *Note:* *If the activity poses a unique, new or significant environment risk, the Woodside Environment Adviser should require a Level 2 exercise be conducted and advise CEM Team of such (and schedule/ organise activity).* *Special consideration should be given to conducting a Level 2 exercise for larger installation vessels i.e. not smaller supply vessels or those infield for shorter periods of time.*	Testing both the facility/ vessel IMT response and that of the CIMT following handover of incident control.
Level 3 Response	Exercises are relevant to all Woodside assets	The number of CMT exercises conducted each year is determined by the Chief Executive Officer, in consultation with the Vice President of Security and Global Workplace.	Test Woodside's ability to respond to and manage a crisis level incident.

7.12.7 Testing of hydrocarbon spill response arrangements

Woodside is required to test hydrocarbon spill response arrangements as per Regulations 22(12), 22(13) and 22(14) 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 7-11, up to eight of the response arrangements shown in Figure 8 8 are tested annually. The objective is to verify effective response to a hydrocarbon spill to the marine environment.

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7.12.8 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 shoreline assessment, or the ability of Woodside's operational and scientific monitoring third party contractor to provide appropriate personnel and equipment.

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. These also constitute sufficient evidence of testing of arrangements e.g. audits, no-notice drills, internal exercises, assurance drills.

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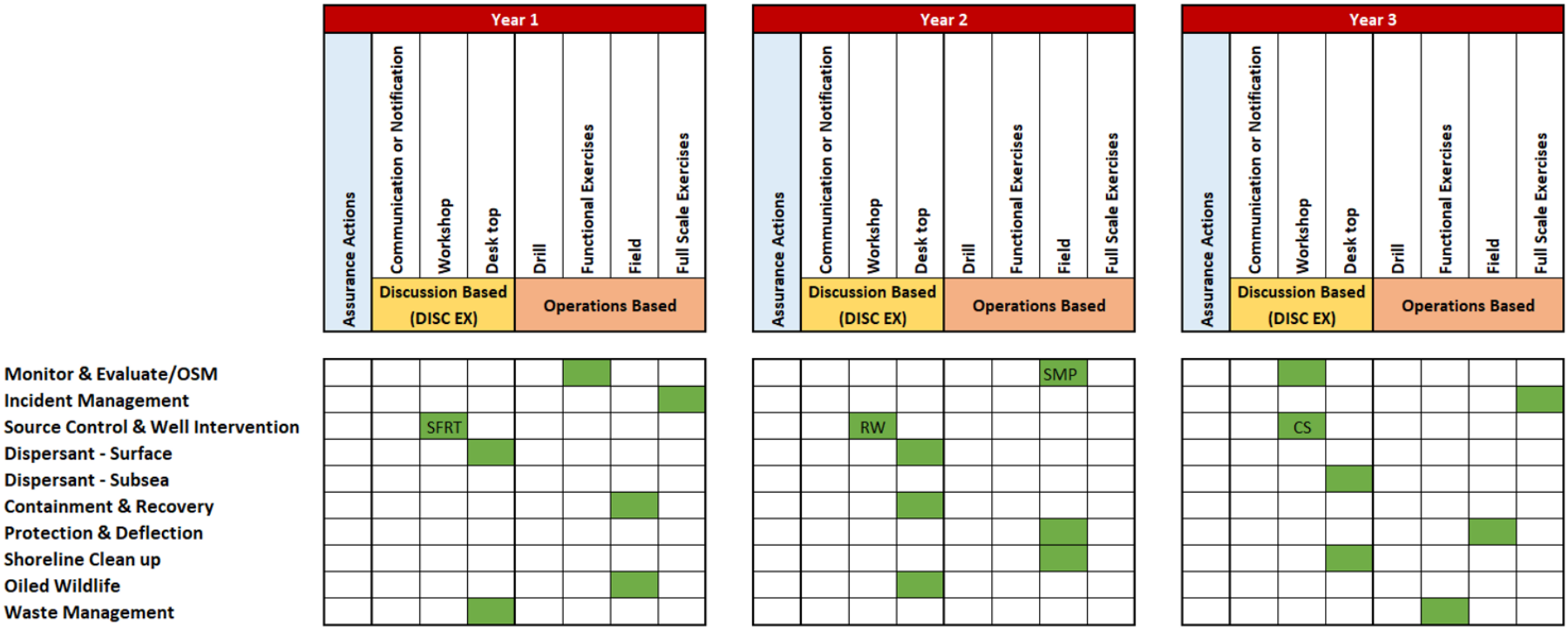


Figure 7-3: Indicative 3-yearly testing of arrangements schedule

Note: Schedule is subject to change, additional detail is included in live document

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7.12.9 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
~	Approximately
<, ≤	Less/fewer than; less/fewer than or equal to
>, ≥	Greater/more than; greater/more than or equal to
°C	Degrees Celsius
ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
ACN	Australian Company Number
AFC	Antifouling Coating
AFFF	Aqueous film-forming foam
AFMA	Australian Fisheries Management Authority
AHO	Australian Hydrographic Office
AIMS	Australian Institute of Marine Science
AINJ	Auditory injury
ALARP	As Low as Reasonably Practicable
AMP	Australian Marine Park
AMSA	Australian Maritime Safety Authority
ANZECC	Australian and New Zealand Environment and Conservation Council
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
AS	Australian Standard
ASAP	As soon as possible
ATSIHP	Commonwealth *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*
AUSCOAST	Australian Coastal (weather warning)
AUSREP	Australian Ship Reporting System, established under Division 2 of Part 4 of the *Navigation Act 2012*
AUV	Autonomous underwater vehicle
BCF	Bioconcentration Factor
BIA	Biologically important area
BOM	Bureau of Meteorology
BP	Boiling Point
CAES	Catch and Effort System
CEFAS	Centre for Environment, Fisheries and Aquaculture Science
CFA	Commonwealth Fisheries Association
CHP	Commonwealth Heritage Place
CIMT	Corporate Incident Management Team
CMMS	Computerised Maintenance Management System
CPT	Cone penetrometer testing
CPTu	Test with pore pressure measurement

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Term	Definition
CS	Cost/sacrifice
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CV	Company Values
DAFF	Commonwealth Department of Agriculture, Fisheries and Forestry
dB	Decibel
DCCEEW	Commonwealth Department of Climate Change, Energy, Environment and Water
DEWHA	Former Commonwealth Department of the Environment, Water, Heritage and the Arts
D.MM°E	Degrees and decimal minutes (east)
D.MM°S	Degrees and decimal minutes (south)
DMPE	Western Australian Department of Mines, Petroleum and Exploration
DNP	Director of National Parks
DoD	Commonwealth Department of Defence
DP	Dynamic Positioning
DPIRD	Western Australian Department of Primary Industries and Regional Development
DPLH	Western Australian Department of Planning, Lands and Heritage
DSEWPAC	Former Commonwealth Department of Sustainability, Environment, Water Population and Communities
DTMI	Western Australian Department of Transport and Major Infrastructure
ECAR	Environmental Compliance Action Register
ECAR	Environmental compliance and action register
EEZ	Exclusive Economic Zone
EMBA	Environment that May be Affected
EMS	Environmental Management System
ENVID	Environment Identification
EOC	Emergency Operations Centre
EP	Environment Plan
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
EPO	Environmental Performance Outcome
EPS	Environmental Performance Standards
ERP	Emergency Response Plan
ESD	Ecologically Sustainable Development
F	Feasibility
F-Pil	Flatback Turtle Pilbara
GDA	Geocentric Datum of Australia
GHG	Greenhouse Gas
G-NWS	Green Turtle North West Shelf
GP	Good Industry Practice
GPGT	Geophysical and geotechnical
GPS	Global Positioning System

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Term	Definition
ha	Hectare
HAZID	Hazard identification
HF	High-frequency
HFO	Heavy Fuel Oil
HOCNF	Harmonised Offshore Chemical Notification Format
HQ	Hazard Quotient
HSE	Health, Safety and Environment
H-WA	Hawksbill Turtle Western Australia
Hz	Hertz
IAP	Incident Action Plan
IC	Incident Controller
IChEMS	Industrial Chemicals Environmental Standard
ICS	Incident Command System
ID	Identity / identification
ILUA	Indigenous Land Use Agreement
IMCRA	Integrated Marine and Coastal Regionalisation of Australia
IMO	International Maritime Organization
IMS	Invasive Marine Species
IMSMA	IMS Management Area
IMSMP	WEL Invasive Marine Species Management Plan
IMT	Incident Management Team
ISO	International Organization for Standardization
IUCN	International Union for Conservation of Nature
JRCC	AMSA's Joint Rescue Coordination Centre
KSCS	Kimberley Sea Country Strategy
KEF	Key ecological feature
kHz	Kilohertz
km	Kilometre
kn	Knot
KPI	Key Performance Indicator
L	Litre
LE	Weighted 24-hour Sound Exposure Level
LCS	Legislation, Codes and Standards
LF	Low frequency
LH-WA	Loggerhead Turtle Western Australia
LNG	Liquefied Natural Gas
Lp	Sound Pressure Level
Lpk	Peak Sound Pressure Level

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Term	Definition
Lux	A standard for measuring light; equal to the amount of visible light per square metre incident on a surface
m	Metre
MAH	Monocyclic aromatic hydrocarbon
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 echosounder
MC	Measurement Criteria
MEER	Maritime Environmental Emergency Response Unit
MFO	Marine fauna observer
MGO	Marine gas oil
microPascal (µPa)	Unit of underwater sound pressure equal to one-millionth of a Pascal
mm	Millimetre
MNES	Matters of National Environmental Significance
MOC	Management of Change
MODU	Mobile Offshore Drilling Unit
MOP	Marine pollution incident
MoU	Memorandum of Understanding
N/A	Not Applicable
NC	No contact to receptor predicted for specified threshold
NHP	National Heritage Place
NIMS	Non-indigenous marine species
nm	Nautical mile
NMFS	National Marine Fisheries Service (US)
NOAA	National Oceanic and Atmospheric Administration (US)
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
NOPTA	National Offshore Petroleum Titles Administrator
NT	Northern Territory
NWMR	North-west marine region
NWS	North West Shelf
NZ	New Zealand
OCNS	Offshore Chemical Notification Scheme
OPEP	Oil Pollution Emergency Plan
OPGGS Act	Commonwealth *Offshore Petroleum and Greenhouse Gas Storage Act 2006*
OSPAR	Oslo–Paris 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

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Term	Definition
OVMSA	Offshore Vessel Management System Assessment
PBC	Prescribed Body Corporate
PBW	Pygmy Blue Whale
PCPT	Piezocone Penetration Test
PFOS	Perfluorooctane sulfonic acid
PJ	Professional Judgement
PK	Peak pressure
PMST	Protected Matters Search Tool
PS	Performance Standard
PTS	Permanent threshold shift
QA/QC	Quality Assurance, Quality Control
RBA	Risk-based Analysis
RCC	Rescue Coordination Centre
RNTBC	Registered Native Title Body Corporate
ROV	Remotely operated vehicle
SBMP	Seabird Management Plan
SBP	Sub-bottom profiler
SEL	Sound exposure level
SIMAP	Spill Impact Mapping and Analysis Program
SIMOPS	Simultaneous operations
SOLAS	(International Convention for the) Safety of Life at Sea
SOPEP	Shipboard Oil Pollution Emergency Plan
SPL	Sound pressure level
SSS	Side scan sonar
SV	Societal Value
t	Tonne
The Regulations	Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023
TSS	Total Suspended Solids
TSSC	Threatened Species Scientific Committee
TTS	Temporary threshold shift
UCH	Underwater Cultural Heritage
UCH Act	Commonwealth *Underwater Cultural Heritage Act 2018*
UK	United Kingdom
US	United States
USBL	Ultra-short baseline
VHF	Very-high-frequency
VP	Vice President
WA	Western Australia

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Term	Definition
WAFIC	Western Australian Fishing Industry Council
WAM	Western Australian Museum
W-LSZ	Western Locally Sourced Zone
WMS	Woodside Management System

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APPENDIX A WOODSIDE ENVIRONMENT AND BIODIVERSITY, CLIMATE AND RISK MANAGEMENT POLICIES

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Environment and Biodiversity Policy

OBJECTIVE

Woodside recognises the intrinsic value of nature and the importance of conserving biodiversity and ecosystem services to support the sustainable development of our society. We are committed to doing our part. We understand and embrace our responsibility to undertake activities in an environmentally sustainable way.

PRINCIPLES

Woodside commits to:

- Implementing a systematic approach to the management of the impacts and risks of our operating activities on an ongoing basis, including emissions and air quality, discharge and waste management, water management, biodiversity and protected areas.
- Applying the mitigation hierarchy principle (avoid, minimise, restore) and a continuous improvement approach to ensure we maintain compliance, improve resource use efficiency and reduce our environmental impacts.
- Embedding environmental and biodiversity management, and opportunities, in our business planning and decision-making processes.
- Complying with relevant laws and regulations and applying responsible standards where laws do not exist.
- Not undertaking new activities[1] within the boundaries of natural sites on the UNESCO World Heritage List.[2]
- Not undertaking new activities within IUCN Protected Areas[3] unless compatible with management plans in place for the area.
- Achieving net zero deforestation[4] 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.

[1] Does not include non-industrial and existing activities that are compatible with maintenance of the listed outstanding universal values.

[2] New UNESCO World Heritage Listings that overlap existing activities will be assessed at the time of listing.

[3] New IUCN Protected Areas that overlap existing activities will be assessed at the time of listing.

[4] 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

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 2ºC above pre-industrial levels" and to pursue "efforts to limit the temperature increase to 1.5ºC". 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[1] near, mid, and long-term net emissions reduction targets that are consistent with Paris-aligned[2] scenarios, covering equity scope 1 and 2 emissions, both operated and non-operated.[3]
- 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.

[1] 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).

[2] 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).

[3] 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

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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Commonwealth legislation	Summary	Relevance to the activity
Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (ATSIHP Act)	This 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.	There are no known sites of Aboriginal Heritage Significance within the Operational Area or EMBA.
Australian Maritime Safety Authority Act 1990	This Act establishes a legal framework for 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. AMSA is the lead agency for responding to oil spills in the marine environment and is responsible for the Australian National Plan for Maritime Environmental Emergencies.	The Act applies to maritime safety and vessel activities associated with the Petroleum Activity. It is relevant to promote maritime safety and the protection of the marine environment from vessel pollution. AMSA Response Centre will be notified of activities and movements 24 to 48 hours before the scheduled activity start date and in the event of incidents during the Petroleum Activity (including oil pollution incidents in Commonwealth waters).

Commonwealth legislation	Summary	Relevance to the activity
Biosecurity Act 2015 Australian Ballast Water Management Requirements Australian Biofouling Management Requirements – Version 4 2023	This Act provides the Commonwealth with powers to take quarantine measures, and implement necessary related programs, to prevent introducing 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 entry, seizure, detention and disposal. This Act includes mandatory controls on using seawater as ballast in ships and declaring 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 Ballast Water Management Requirements outline the mandatory ballast water management requirements to reduce the risk of introducing harmful aquatic organisms into Australia's marine environment through ballast water from international vessels. These requirements are enforceable under the *Biosecurity Act 2015.* The *Australian biofouling management requirements, Version 2* set out vessel obligations and best practice for the management of biofouling when operating vessels under biosecurity control within Australian territorial seas.	The Act and associated Regulations and Requirements apply to the use of all internationally sourced Petroleum Activity vessels operating in Australian Waters. Controls must be applied to manage the potential for introduction of IMS.
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) Environment Protection and Biodiversity Conservation Regulations 2025	This 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 Act as 'matters of national environmental significance' (MNES). The Act sets a regime that aims to ensure actions taken on (or impacting upon) Commonwealth land or waters are consistent with the principles of ESD (ecologically sustainable development). The Act aims to protect MNES by setting out a regime for environmental assessment and approvals processes for proposed actions, through which the Commonwealth seeks to protect Australian biodiversity and integrates management of important natural and culturally significant places. Where activities have existing approvals under the Act, these will continue to apply.	This Act applies to all aspects of the Petroleum Activity that have the potential to impact MNES. Where there is the potential for MNES to be impacted, an assessment of impacts must be presented in the EP. Authorisation to undertake the Petroleum Activity will be met through NOPSEMA's decision making processes which includes an assessment of the Petroleum Activities compliance with the relevant regulations and plans under the Act, which are presented throughout this EP.

Commonwealth legislation	Summary	Relevance to the activity
Environment Protection (Sea Dumping) Act 1981 Environment Protection (Sea Dumping) Regulations 1983	This Act provides for protecting the environment by regulating dumping of matter into the sea, incineration of waste at sea, and placement of artificial reefs.	The Petroleum Activity does not include sea dumping activities.
Industrial Chemicals Environmental Management (Register) Act 2021 Industrial Chemicals Environmental Management (Register) Instrument 2022	The Act is the legislative framework for the Industrial Chemicals Environmental Management Standard (IChEMS), a scheme to implement a nationally consistent approach to the management of risks to the environment resulting from the use of industrial chemicals, including those by the oil and gas industry, but on its own does not impose enforceable bans on specific chemicals or obligations for proponents. The Instrument supports the Act to create consistent, national, and enforceable standards for environmental risk management of industrial chemicals. Importantly, the Act anticipates that States and Territories (or other Commonwealth laws) must adopt and enforce these standards. Until such additional legislation is passed in relevant jurisdictions, the Instrument's listings (e.g. AFFF bans) have no direct legal effect. Note, Section 4 of the Act states: "Another law of the Commonwealth, or a law of a State, may apply or adopt the [Instrument] (with or without modification) and may make provision for, or in relation to, the implementation and enforcement of the [Instrument], as so applied or adopted."	Whilst no chemical discharges are planned as part of this Petroleum Activity. AFFF may be discharged in the event of an emergency. Woodside's Environment Chemical Selection and Assessment Guideline has regard for the intent of and the proposed requirements set out in the Act, Instrument and IChEMS.
Native Title Act 1993 Native Title (Indigenous Land Use Agreements) Regulations 2024	This Act recognises and protects the traditional rights and interests of First Nation groups in land and waters through native title. Prescribed Bodies Corporate (PBC) manage and protect their native title rights and interests by establishing ways in which future dealings affecting native title may proceed and to set standards for those dealings. Indigenous Land Use Agreements (ILUAs) are voluntary, legally binding agreements established under the Act between native title parties and others regarding land/water use.	Yes – Whilst no planned activities occur within a native title claim or determination, 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 consult. There are no native title claims or determinations overlapping the Operational Area or EMBA. There are five that are coastally adjacent to the Operational Area. There are no Indigenous Land Use Agreements (ILUAs) overlapping the Operational Area or EMBA and five that are coastally adjacent to the Operational Area.

Commonwealth legislation	Summary	Relevance to the activity
National Greenhouse and Energy Reporting Act 2007	This Act establishes the legislative framework for the National Greenhouse and Energy Reporting Scheme for reporting GHG emissions and energy consumption and production by corporations in Australia.	The vessel contractor is required to report GHG emissions under this Act.
Navigation Act 2012 *Protection of the Sea (Prevention of Pollution from Ships) Act 1983* Marine Order 12: Construction – subdivision and stability, machinery and electrical installations Marine Order 15: Construction—fire protection, fire detection and fire extinction Marine Order 21: Safety and emergency arrangements Marine Order 27: Safety of navigation and radio equipment Marine Order 30: Prevention of collisions Marine Order 47: Offshore Industry units Marine Order 57: Helicopter operations Marine Order 91: Marine pollution prevention – oil Marine Order 93: Marine pollution prevention – noxious liquid substances Marine Order 94: Marine pollution prevention – packaged harmful substances Marine Order 95: Marine pollution prevention – garbage Marine Order 96: Marine pollution prevention – sewage Marine Order 97: Marine pollution prevention – air pollution	This Act regulates navigation and shipping, including SOLAS. This Act is the primary legislation that regulates ship and seafarer safety and shipboard aspects of marine environment protection and pollution prevention. Marine Orders are subordinate rules made pursuant to the Navigation Act 2012 and Protection of the Sea (Prevention of Pollution from Ships) Act 1983 affecting the maritime industry. They are a means of implementing Australia's international maritime obligations by giving effect to international conventions in Australian law. Marine Orders apply to vessel movements, safety, discharges and emissions.	The Act and Marine Orders apply to vessel activities associated with the Petroleum Activity.

Commonwealth legislation	Summary	Relevance to the activity
Offshore Petroleum and Greenhouse Gas Storage Act 2006 (OPGGS Act) Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2025 Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2024	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 listed Regulations.	The Petroleum Activity must be undertaken in accordance with the requirements of this Act. This EP has been prepared in accordance with the relevant requirements of the OPGGS Act and the Environment Regulations.
Ozone Protection and Synthetic Greenhouse Gas Management Act 1989 Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995	This Act provides for protecting ozone in the atmosphere by controlling and ultimately reducing the manufacture, import and export of ozone-depleting substances and synthetic GHGs, and replacing them with suitable alternatives. The Act will only apply to Woodside if it manufactures, imports or exports ozone-depleting substances.	This Act applies where ozone-depleting substances is found on vessel refrigeration systems, however, this is a rare occurrence and not anticipated. The Petroleum Activity does not include import, export or manufacture activities of ozone-depleting substances.
Protection of the Sea (Powers of Intervention) Act 1981 Protection of the Sea (Powers of Intervention) Regulations 1983	This Act authorises the Commonwealth to take measures to protect the sea from pollution by oil and other noxious substances discharged from ships. It provides legal immunity for persons acting under an AMSA direction.	The Act may apply in the event of an unplanned hydrocarbon release from a vessel collision.
Protection of the Sea (Prevention of Pollution from Ships) Act 1983 Protection of the Sea (Prevention of Pollution from Ships) (Orders) Regulations 1994 Marine Order 91: Marine pollution prevention – oil Marine Order 93: Marine pollution prevention – noxious liquid substances Marine Order 94: Marine pollution prevention – packaged harmful substances Marine Order 95: Marine pollution prevention – garbage Marine Order 96: Marine pollution prevention – sewage Maritime Legislation Amendment (Prevention of Air Pollution from Ships) Act 2007 International Convention for the Prevention of Pollution from Ships (MARPOL Convention)	This Act relates to protecting 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. The Act applies to all Australian ships, regardless of their location. It applies to foreign ships operating between 3 NM off the coast out to the end of the Australian Exclusive Economic Zone (200 NM). It also applies within the 3 NM of the coast where the State/Northern Territory does not have complementary legislation. All the Marine Orders listed, except for Marine Order 95, are enacted under both the *Navigation Act* and the *Protection of the Sea (Prevention of Pollution from Ships) Act*. The *Maritime Legislation Amendment (Prevention of Air Pollution from Ships) Act 2007* is an amendment to the *Protection of the Sea (Prevention of Pollution from Ships) Act 1983*. This amended Act provides for protecting the sea from pollution by oil and other harmful substances discharged from ships.	The Act and Marine Orders apply to vessel activities associated with the Petroleum Activity.

Commonwealth legislation	Summary	Relevance to the activity
Protection of the Sea (Harmful Antifouling Systems) Act 2006 Marine Order 98: Marine pollution – anti-fouling systems	This Act relates to Australia's obligations under the international Antifouling System Convention, prohibiting harmful organotin compounds (like TBT) on ship hulls to protect the marine environment. It prohibits the application of such systems on Australian ships and restricts non-complying ships from entering Australian ports.	The Act applies to vessels operating in Australian waters, including for the Petroleum Activity.
Underwater Cultural Heritage Act 2018 (UCH Act) Underwater Cultural Heritage Guidance for Offshore Developments Guidelines on the application of the *Underwater Cultural Heritage Act 2018*	The Act prescribes penalties for damaging protected Underwater Cultural Heritage without a permit under Section 30 or in contravention of a permit under Section 28. Protected Underwater Cultural Heritage is prescribed in Section 16 to automatically include the remains and associated artefacts of any vessel or aircraft that has been in Australian waters for 75 years, whether known or unknown. This protection is also extended to Underwater Cultural Heritage in Commonwealth waters specified by the Environment Minister under Section 17. Without a declaration under this section, Aboriginal Underwater Cultural Heritage is not protected under the *Underwater Cultural Heritage Act*.	Underwater heritage sites within closest proximity to the Operational Areas and EMBA are listed in the EP.

APPENDIX C WOODSIDE MASTER EXISTING ENVIRONMENT

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Description of the Existing Environment

August 2026

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1. INTRODUCTION

1.1 Purpose

This document applies, where indicated in the relevant Environment Plan (EP), to Woodside Energy Ltd. and Woodside Energy Group (Woodside) activities and operations.

1.2 Scope

Woodside is the titleholder of multiple petroleum titles for exploration, development, production and decommissioning activities in the marine waters of north-western Western Australia (WA). This document includes details of the relevant values and sensitivities of the environment as required by the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Commonwealth) (OPGGS (E) Regulations), to inform the impact and risk evaluation of Woodside's activities. Additional information, appropriate to the nature and scale of the impacts and risks of activities that may interact with the environment outside of the scope of this document, will be used to further inform impact and risk assessments and be included in the Description of the Existing Environment of individual EPs.

This Master Existing Environment document identifies and describes the values and sensitivities of the existing environment within the broadly defined Woodside activity areas located in Commonwealth and coastal waters off north-western WA, with a focus on the North-west Marine Region (NWMR), including adjacent coastal waters and shoreline habitats. This document also summarises the regional key values of the South-west Marine Region (SWMR) (extending the WA/South Australia (SA) border) and the North Marine Region (NMR), including adjacent coastal waters and shoreline habitats, as they are relevant to the environment that may be affected (EMBA)[1].

The marine bioregions are described Table 1-1 and shown in Figure 1-1. The NWMR is divided into three large-scale ecological marine systems based on the influence of major ocean currents, seafloor features and eco-physical processes, including Kimberley, Pilbara and Ningaloo-Leeuwin. For the NWMR, Table 1-1 outlines the associated marine systems and relevant Woodside activity areas.

Table 1-1: Description of the marine bioregions, marine systems and associated Woodside activity area and key environmental sensitivities

Marine bioregion*	Marine system	Relevant key environmental sensitivities	Woodside activity area
North-west (Department of Sustainability, Environment, Water, Population and Communities (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 (NT) border to Kalbarri, south of Shark Bay in WA, covering an area of about 1.07 million km², and includes extensive areas of shallower waters on the continental shelf, as well as deep areas of abyssal plain where water is 5,000 m or deeper.	**Kimberley** The northern boundary is the limit of the NWMR; the southern boundary extends west of Broome to the northern edge of the Exmouth Plateau.	• Scott Reef • Rowley Shoals	Browse Basin
	Pilbara The northern boundary extends west of Broome to the northern edge of Exmouth plateau; the southern boundary follows a line west of North West Cape along the southern boundary of Exmouth Plateau.	• Dampier Archipelago • Rankin Bank • Glomar Shoal	North West Shelf (NWS), inclusive of Scarborough gas fields
	Ningaloo-Leeuwin The northern boundary extends from shore at North West Cape directly out along Cape Range escarpment; the southern boundary is the limit of the NWMR.	• Ningaloo • Muiron Islands • Exmouth Gulf	North West Cape

[1] The EMBA encompasses the environmental and social values and sensitivities that might be contacted by surface or subsurface hydrocarbons in the unlikely event of any worst-case spill from Woodside's activities. The values and sensitivities include the physical environments and biological communities present, in addition to protected species and areas, and socioeconomic and cultural values.

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Marine bioregion*	Marine system	Relevant key environmental sensitivities	Woodside activity area
South-west (DSEWPaC 2012b)** The SWMR comprises Commonwealth waters from the eastern end of Kangaroo Island in SA to Shark Bay in WA. The region spans about 1.3 million km² of temperate and subtropical waters and abuts the coastal waters of SA and WA.	Not applicable.	Key environmental values at a regional level considered relevant in the context of the EMBA	No applicable Woodside activity area
North (DSEWPaC 2012c) The NMR comprises Commonwealth waters from West Cape York Peninsula to the NT/WA border). The region covers about 625,689 km² of tropical waters in the Gulf of Carpentaria and Arafura and Timor seas, and abuts the coastal waters of Queensland and the NT.			

**The EMBA for the marine bioregions used in this document has been extended to include adjacent coastal waters and shoreline habitats.*

***The extent of the SWMR for this document has been adjusted to only include marine and coastal waters extending from Shark Bay in WA to the WA/SA border. The boundary of the SWMR as described by DSEWPaC (2012b) extends to the eastern end Kangaroo Island in SA. However, this boundary lies outside the scope of this document.*

1.3 Methodology

This document is informed by resources that include:

- 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 adjacent coastal waters and shoreline habitats (Appendix A)
- State (WA)/Commonwealth marine park management plans
- the *Environment Protection and Biodiversity Conservation* (EPBC) *Act 1999* (Commonwealth) (EPBC Act) Species Profile and Threats Database (SPRAT)
- EPBC Act Part 13 statutory instruments: recovery plans, conservation advice and wildlife conservation plans for listed threatened and migratory species
- peer-reviewed scientific publications, as well as Woodside and joint venture-funded studies and other titleholder-funded study findings available in the public domain.

The PMST uses a conservative, grid-based search methodology rather than precise coordinates to determine the potential presence of matters of national environmental significance (MNES). For marine areas located more than 30 km offshore, this involves using 32 km × 32 km grid cells to identify spatial overlap with listed MNES. As a result, the PMST report (Appendix A) may identify MNES that do not directly intersect with the EMBA, including environmental and socioeconomic receptors that do not overlap with the marine environment or have coastal interface. The Australian Marine Spatial Information System was used to determine the exact location of a feature to determine whether it overlaps or is adjacent to the EMBA. Accordingly, MNES identified in the PMST that are not within the EMBA or associated with marine or coastal environments, and species that do not rely on marine or shoreline habitats (for example, species with no marine foraging or life-cycle processes), have not been assessed within this document.

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1.4 Review and revision

The information presented in this document is reviewed and updated least every five years. 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 the status of EPBC Act listed species, Part 13 instruments, policies and guidelines, key advice from external stakeholders, and recently published scientific literature.

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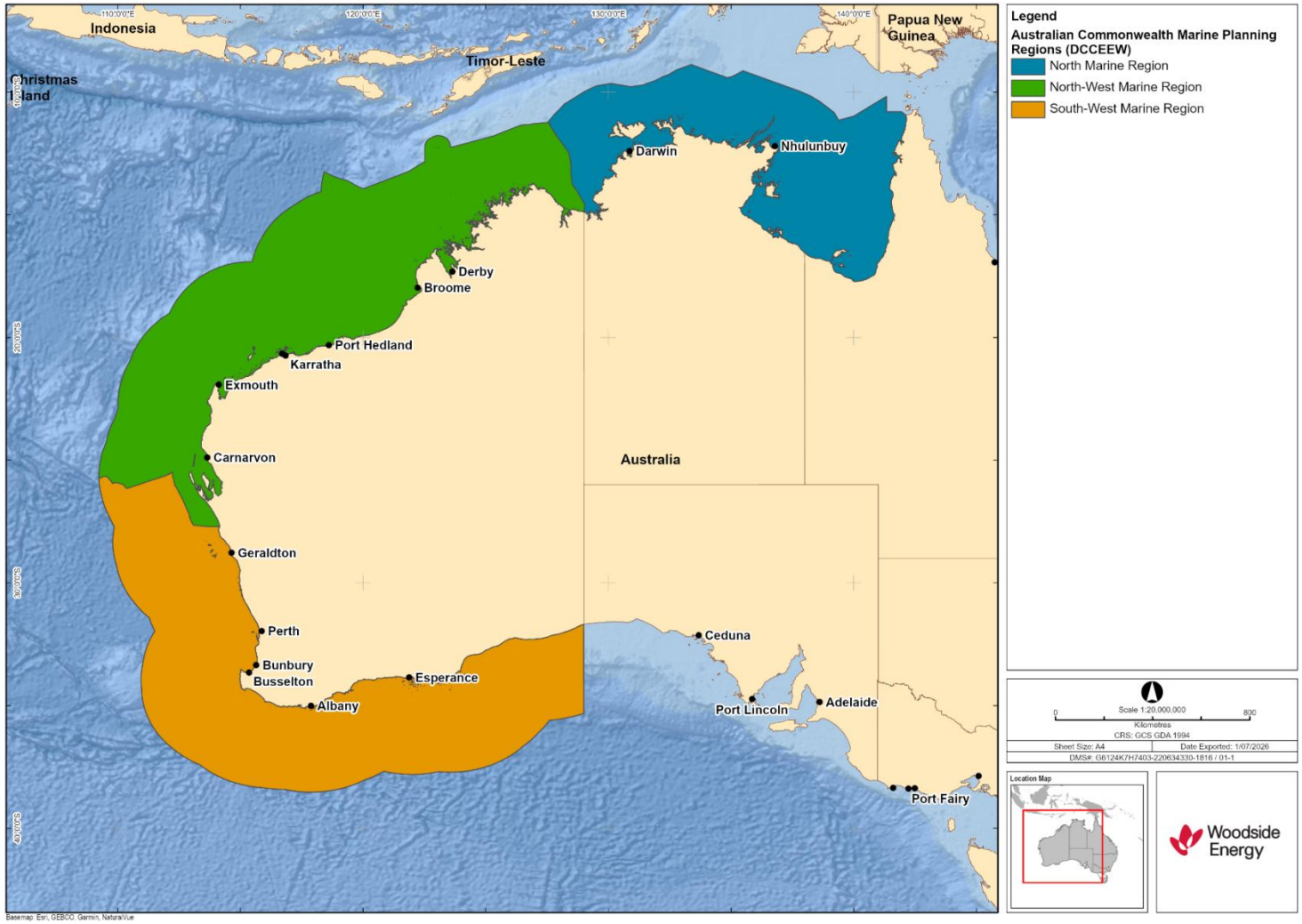


Figure 1-1: Marine bioregions – NWMR, SWMR, NMR and South-east (as defined under the Environment Protection and Biodiversity Conservation Act (EPBC Act)), including adjacent coastal waters and shoreline habitats

Refer to DCCEEW (2021b)

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2. PHYSICAL ENVIRONMENT

2.1 Regional context

Table 2-1 presents the key physical characteristics of the NWMR, SWMR and NMR. 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
NWMR (DSEWPaC 2012a)	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. 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 (Department of Environment, Heritage, Water and the Arts (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, banks and shoals.
SWMR (DSEWPaC 2012b)	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, which 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.
NMR (DSEWPaC 2012c)	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. 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 – the Kimberley, the Pilbara and Ningaloo-Leeuwin – based on the influence of major ocean currents, seafloor features and eco-physical processes (such as climate, tides, freshwater inflow) upon the region (DSEWPaC 2012a).

The three large-scale marine systems approximate the Woodside activity areas, which include Browse Basin, the NWS/Scarborough, and North West Cape (see Section 1.2 for Woodside activity areas) within the NWMR (Figure 2-1). Table 2-2 outlines the key characteristics of each marine system.

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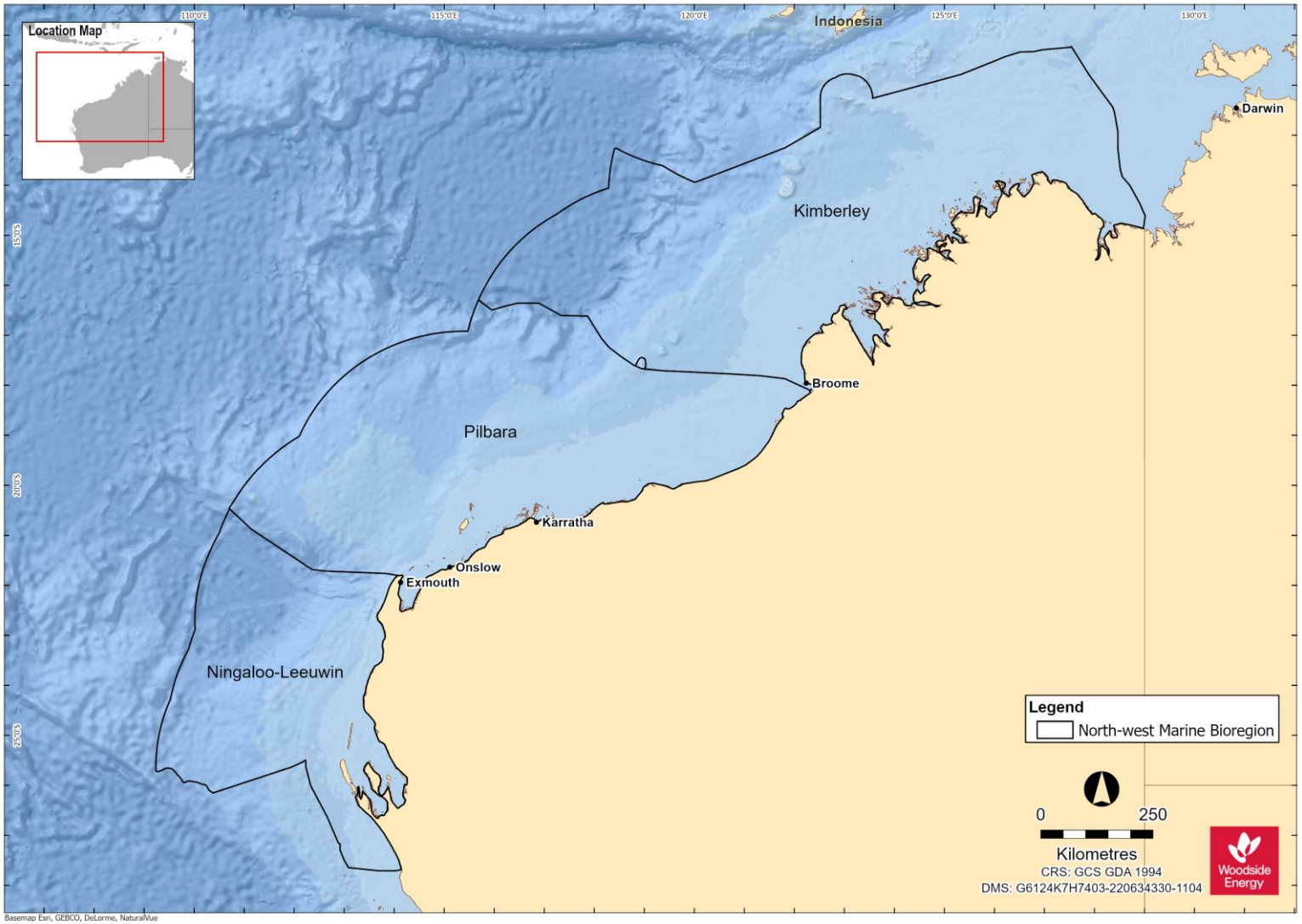


Figure 2-1: The marine systems of the NWMR

Source: DEWHA (2007a)

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Table 2-2: Key characteristics of the marine systems of the NWMR

Marine system	Key characteristics
Kimberley	• 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 runoff • Turbid coastal waters (as in, light-limited systems) • Dominated by shelf environments • Predominantly hard substrates in inner to mid-shelf environments • Includes shelf-edge atolls: Scott Reef, Rowley Shoals
Pilbara	• 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	• Subtropical arid climate Leeuwin Current consolidates • Transitional tropical/temperate faunal area • Higher water clarity in nearshore and offshore environments • Narrow shelf and slope • Marginal tidal range • Seasonal wind forcing more dominant influence on marine environment

Source: DEWHA (2007a)

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). Table 2-3 provides 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
Meteorology	
Seasonal patterns	Seasonal changes in wind direction and rainfall are important factors for driving the ecological processes in the NWMR (DSEWPaC 2012a). The broader NWMR experiences variations of a tropical or monsoon climate, with the northern areas featuring two distinct seasons: the dry season from May to September, and the wet season from October through to April. The wet season is Australia's peak period for tropical cyclones, rainfall and severe thunderstorms (Bureau of Meteorology (BOM) 2026a). The peak of the cyclone season usually occurs between December and March (DSEWPaC 2012a). The Kimberley region features a tropical monsoonal climate, the Pilbara region features a tropical arid climate, and the Ningaloo-Leeuwin region experiences a subtropical arid climate (DEWHA 2007a).

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Receptor	Description
Air temperature and rainfall	Temperatures and rainfall vary seasonally in the NWMR region. Higher temperatures usually occur during the wet season, with average daily maximum temperatures ranging between 27ºC and 39ºC, and average daily minimum temperatures ranging between 12ºC and 27ºC. Cooler temperatures occur in the dry season; the average daily maximum temperatures range from 21ºC to 36ºC and average daily minimum temperatures range between 9ºC and 21ºC (Figure 2-2 and Figure 2-3 (BOM 2024)). Higher rainfall in the region typically occurs during the northern wet season, with the average rainfall between 100 mm and 2,400 mm, with highest falls observed late in the season. Comparatively, the average rainfall in the dry season is between 100 mm and 300 mm (BOM 2024). These seasonal occurrences are often associated with the passage of tropical low-pressure systems and cyclones (DSEWPaC 2012a).
Wind	Wind patterns in north-west WA are dictated by the seasonal movement of atmospheric pressure systems. During the northern wet season, high-pressure cells produce prevailing winds from the north-west and south-west, which vary between 10 and 13 m/s. During the dry season, high-pressure cells over central Australia produce north-easterly to south-easterly winds with average speeds of between 6 and 8 m/s (BOM 2022b). Refer to Figure 2-4.
Tropical cyclones	Tropical cyclone activity occurs during the wet season, with cyclone activity typically occurring between November and April, although few cyclones tend to occur during November. About five to six tropical cyclones occur in WA during each cyclone season, with about half of these becoming severe (BOM 2026b). See Figure 2-6.
Oceanography	
Ocean temperature	Waters in the NWMR are tropical year-round, with sea surface temperatures in open shelf waters typically reaching about 26°C in summer and dropping to about 22°C in winter. Nearshore temperatures (as recorded for the NWS area) fluctuate more annually, from about less than 23°C in winter to about 31°C in summer (Hallenberger *et al.* 2022), indicative of present-day sea surface temperatures, acquired from the Commonwealth Scientific and Industrial Research Organisation (CSIRO) Oceans and Atmosphere database. Warmer sea surface temperatures are also driven by the decadal variation of Niño/Niña strength in the NWMR. The Atlantic warm sea surface temperature anomalies from the Niño/Niña events drive a series of climate mean-state changes in the Indo-Pacific region, including sea surface temperature warming in the tropical eastern Indian Ocean (Xue *et al.* 2025). See Figure 2-7 and Figure 2-8, for the seasonal variation across and within the NWMR.
Currents	The major surface currents influencing north-west WA flow towards the poles and include the Indonesian Throughflow, the Leeuwin Current, the South Equatorial Current and the Eastern Gyral Current. The Ningaloo Current, the Holloway Current, the Shark Bay Outflow and the Capes Current are seasonal surface currents in the region. Below these surface currents are several subsurface currents, the most important of which are the Leeuwin Undercurrent and the West Australian Current. These subsurface currents flow towards the equator in the opposite direction to surface currents (DEWHA 2007a). The Indonesian Throughflow and Leeuwin Current weaken during the dry season (April to September), and more so during El Niño years (DSEWPaC 2012a). See Figure 2-9. 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. They are an important conduit for the poleward heat and mass transport along the west coast (Wijeratne *et al.* 2018). 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).
Waves	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). The NWS within the NWMR is a known area of internal wave generation. Both internal tides and internal waves are thought to be more prevalent during summer months due to the increased stratification of the water column (DEWHA 2007a). Along the continental slope of the NWMR, strong internal waves and interaction between semi-diurnal tidal currents and seabed topographic features facilitate upwelling events and localised productivity events (Holloway 2001).

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Receptor	Description
Tides	Tides on the NWS increase as the water moves from deep towards the shallower coast. The highest offshore tides are experienced at the border of the Browse and Canning basins. The smallest tides are experienced at the Exmouth Plateau, near the coast. Tides of the NWS 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. The tide range – represented by the mean spring range – 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 mean spring range then increases again through Joseph Bonaparte Gulf and on up 5.5 m at Darwin (RPS 2016).

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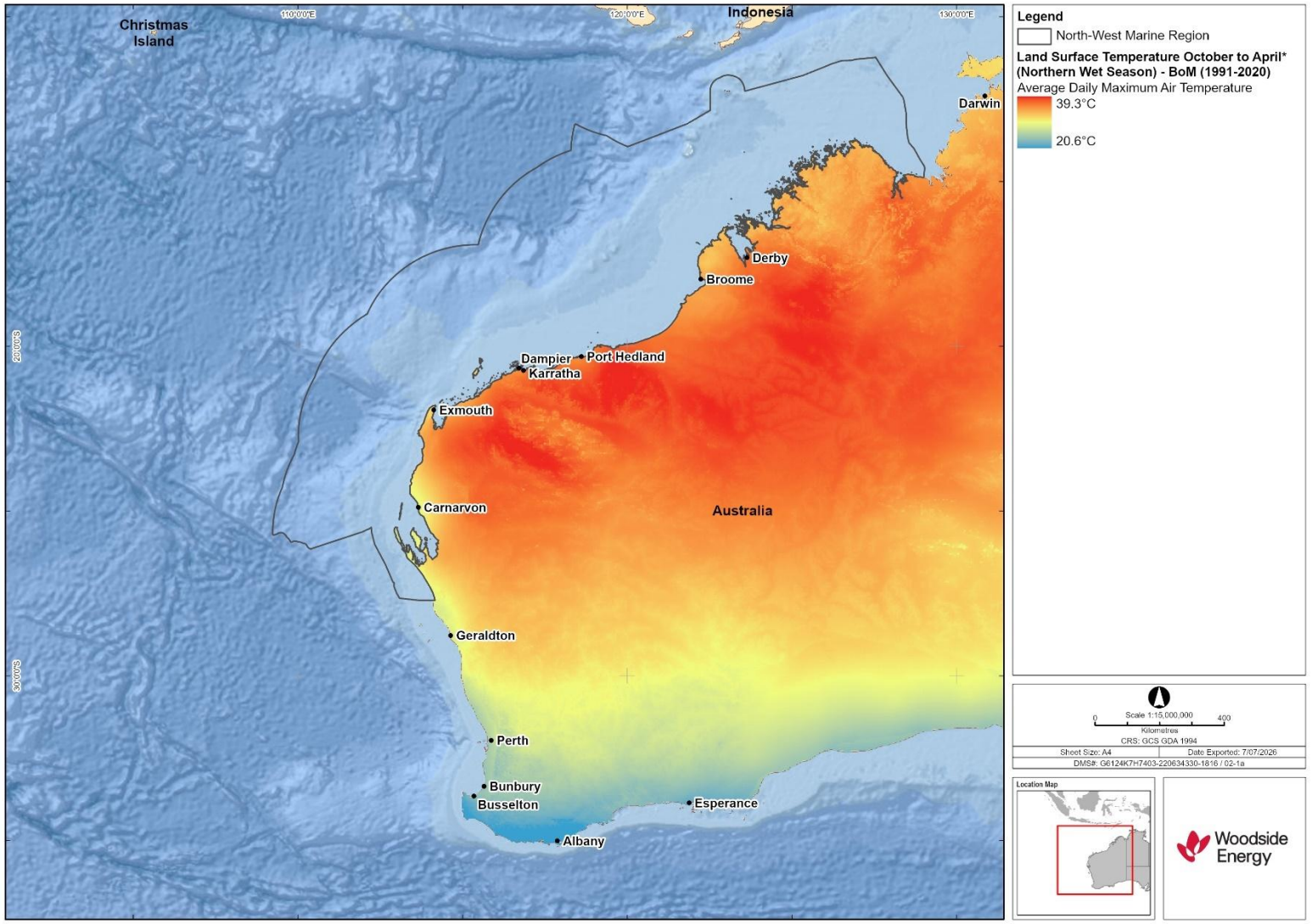


Figure 2-2: Average daily maximum air temperature for land surface adjacent to NWMR – northern wet season

Source: BOM (2022a)

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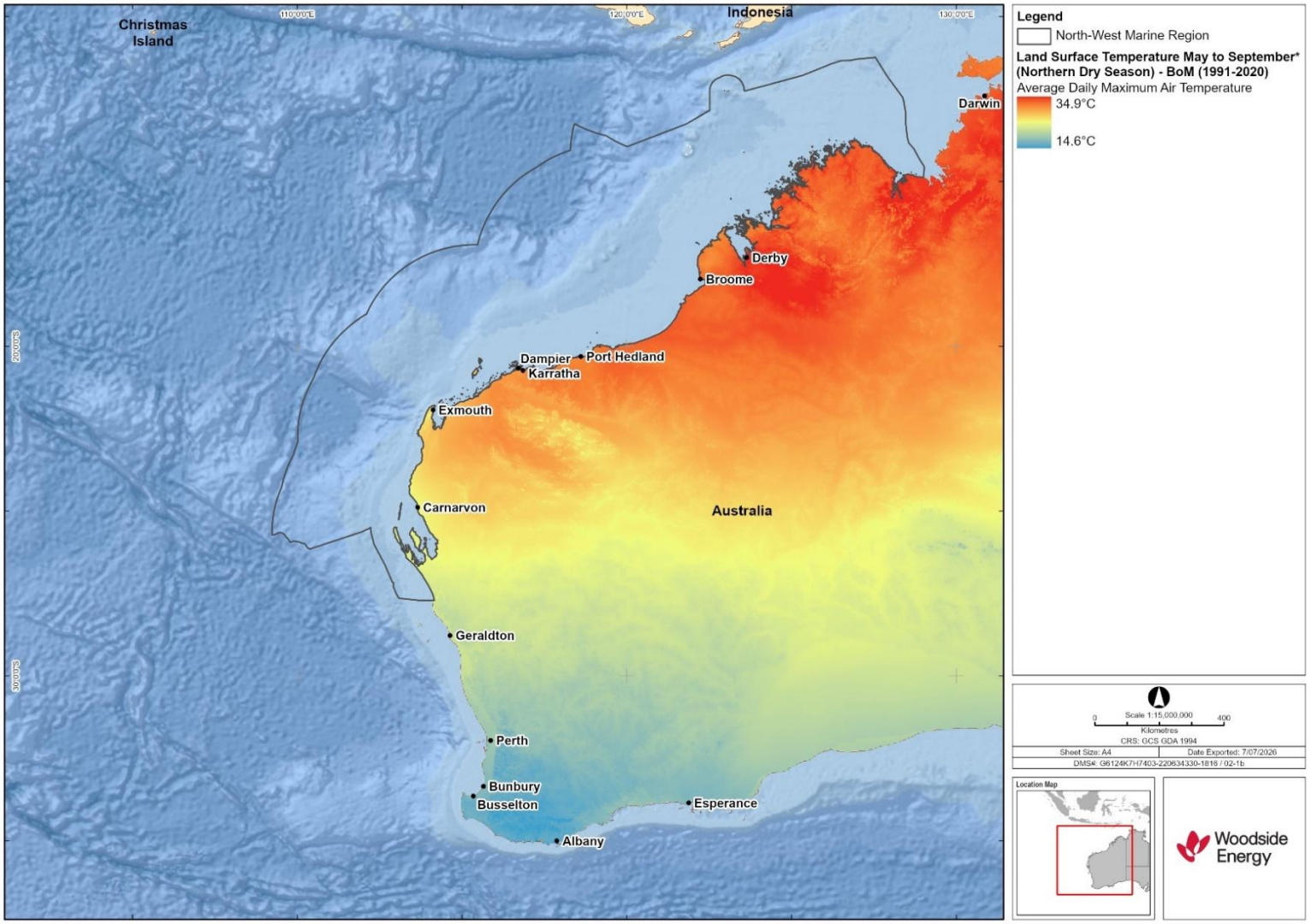


Figure 2-3: Average daily maximum air temperature for land surface adjacent to NWMR – northern dry season

Source: BOM (2022a)

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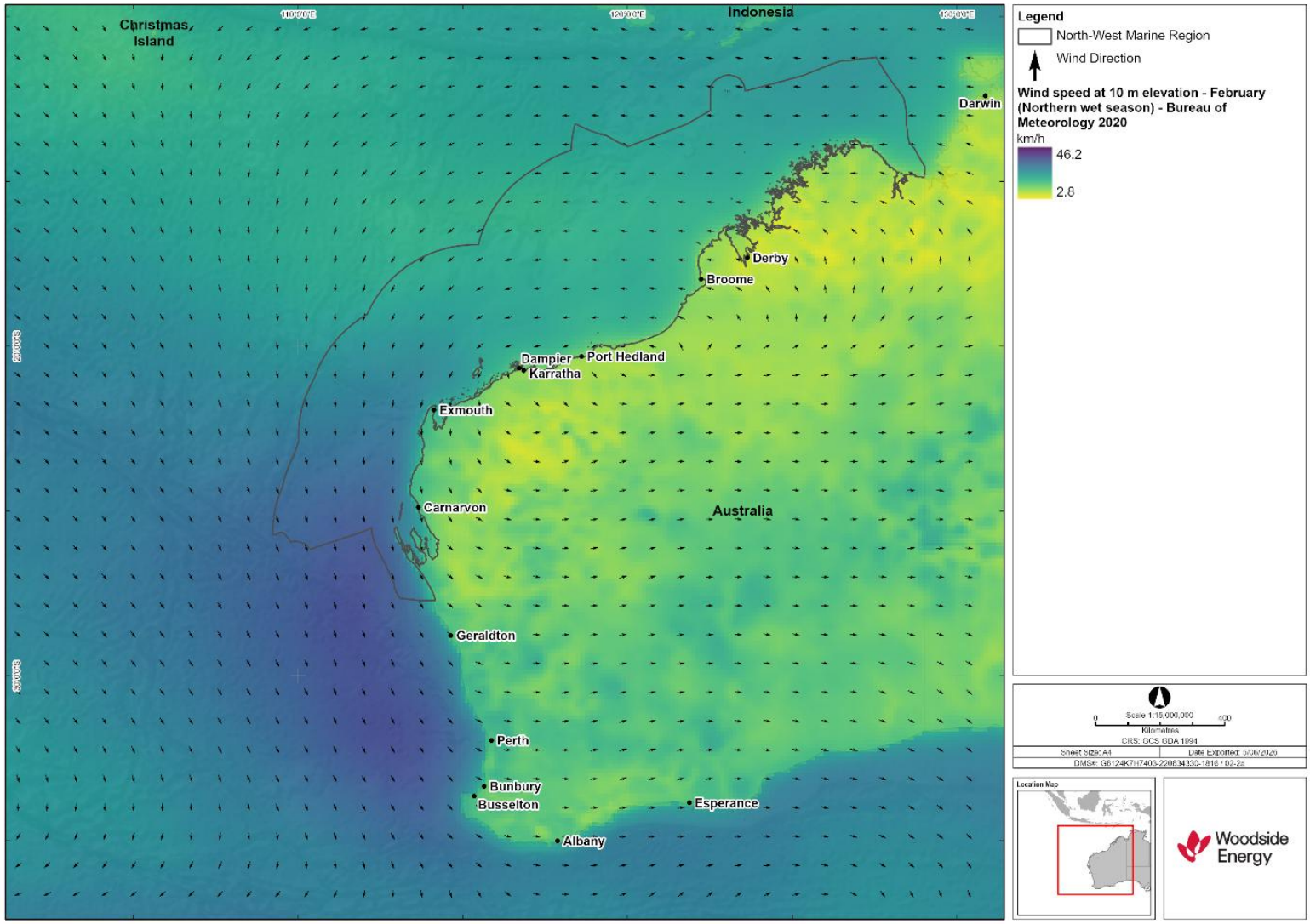


Figure 2-4: Average monthly surface wind direction and velocity for NWMR – February, northern wet season

Source: BOM (2020a)

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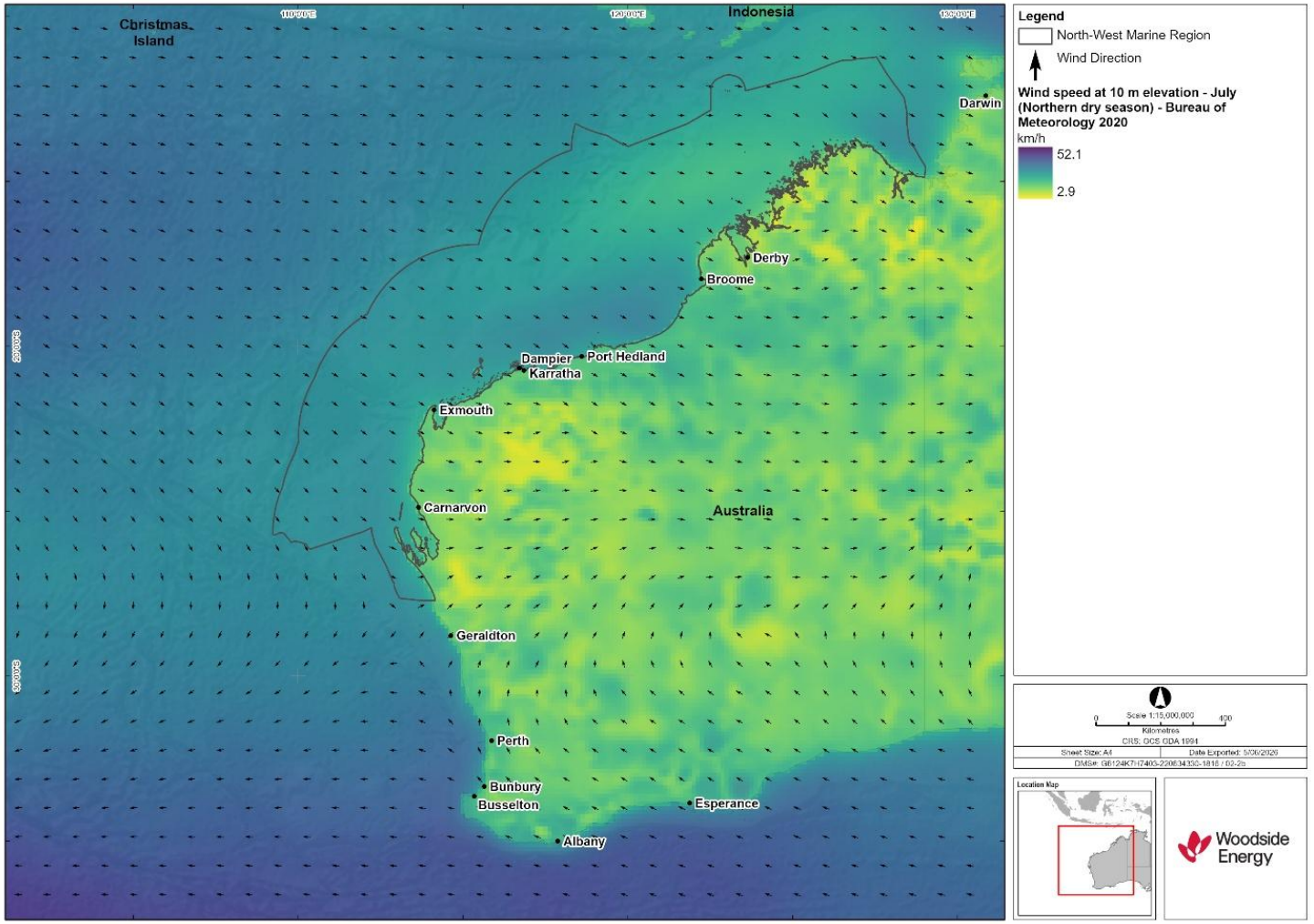


Figure 2-5: Average monthly surface wind direction and velocity for the NWMR – July, northern dry season

Source: BOM (2020a)

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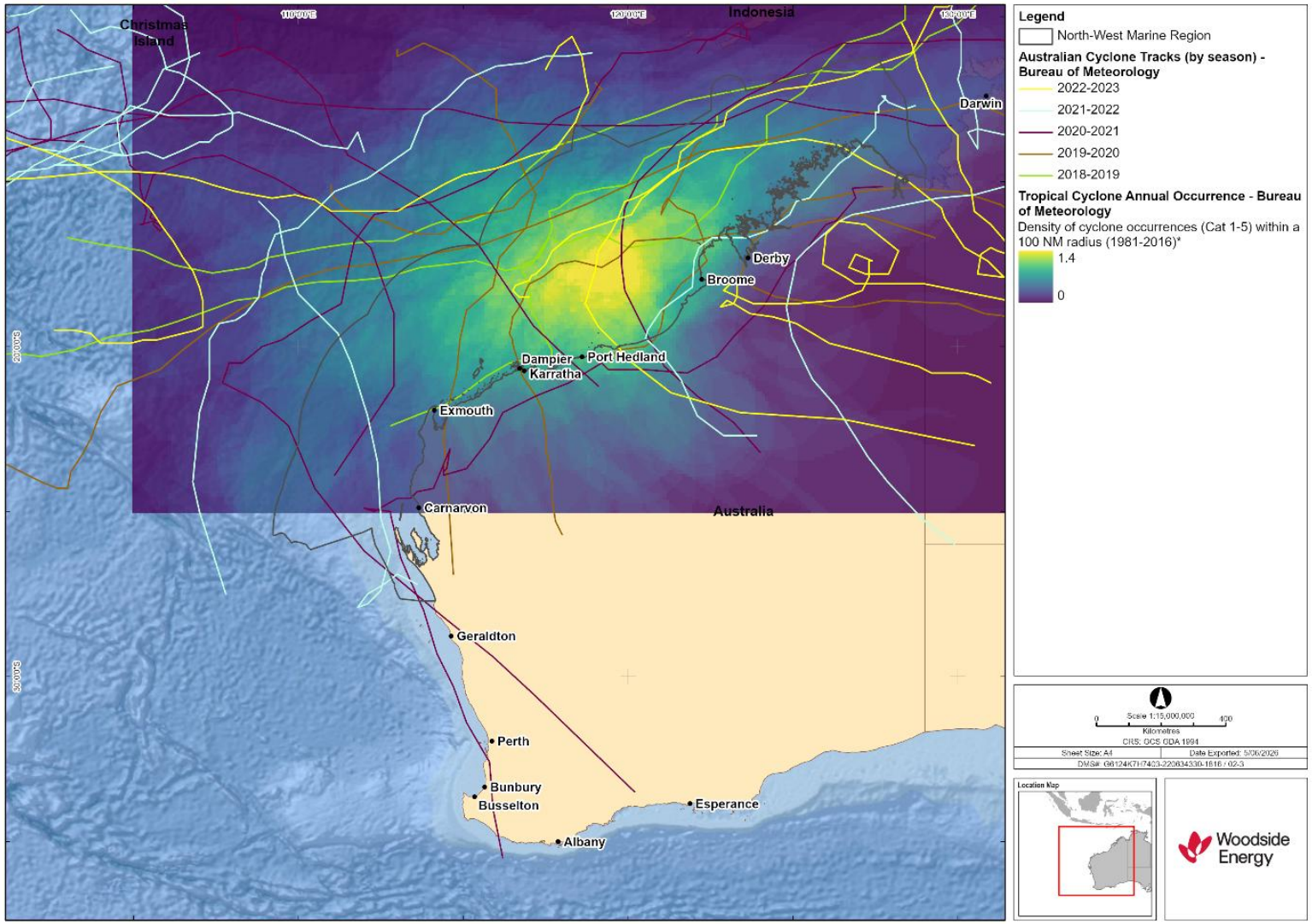


Figure 2-6: Tropical cyclone annual occurrence and cyclone tracks for the NWMR

Source: BOM (2022a)

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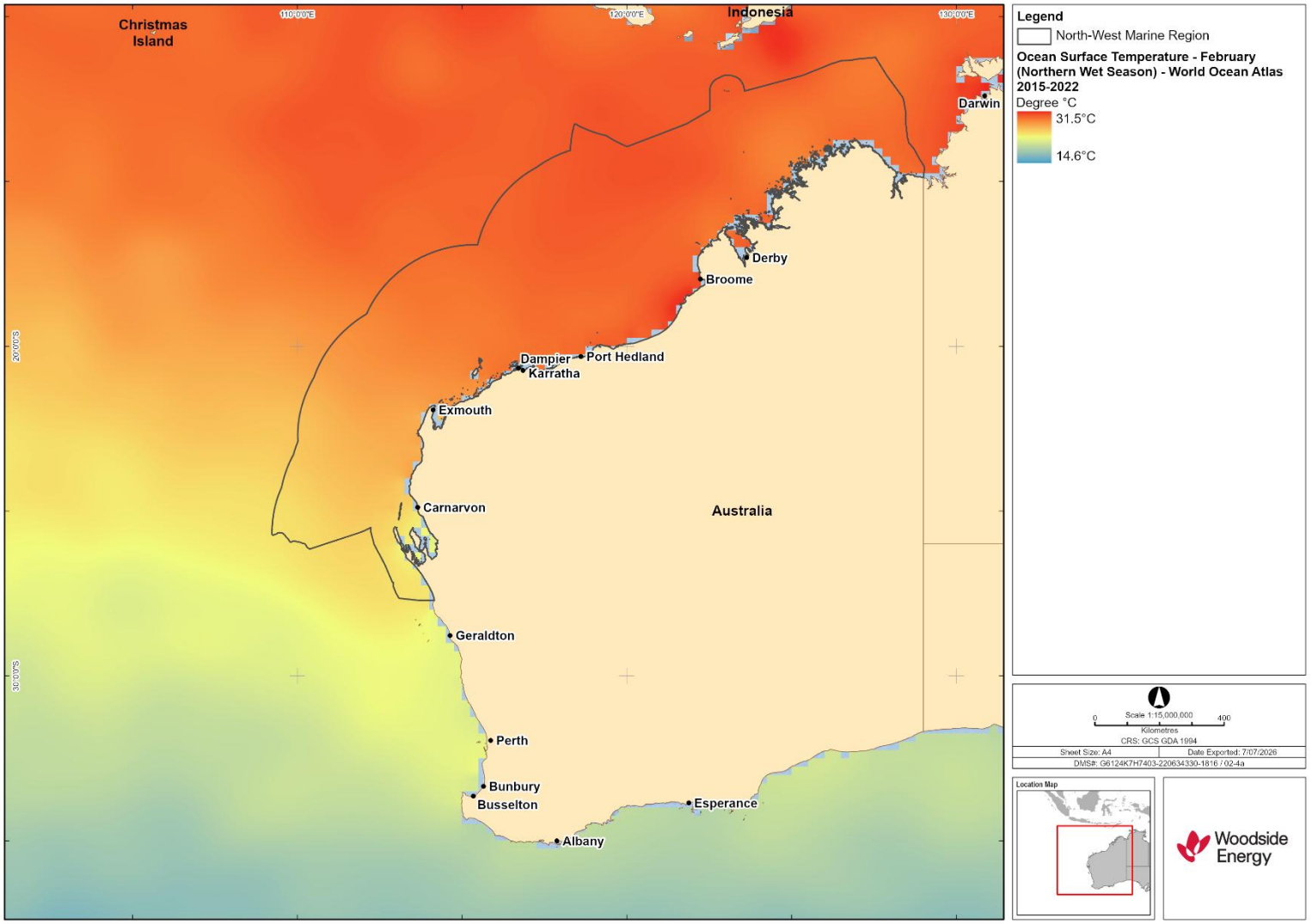


Figure 2-7: Ocean surface temperature for the NWMR – February, northern wet season

Source: Locarnini et al. *(2018), in World Ocean Atlas (2018)*

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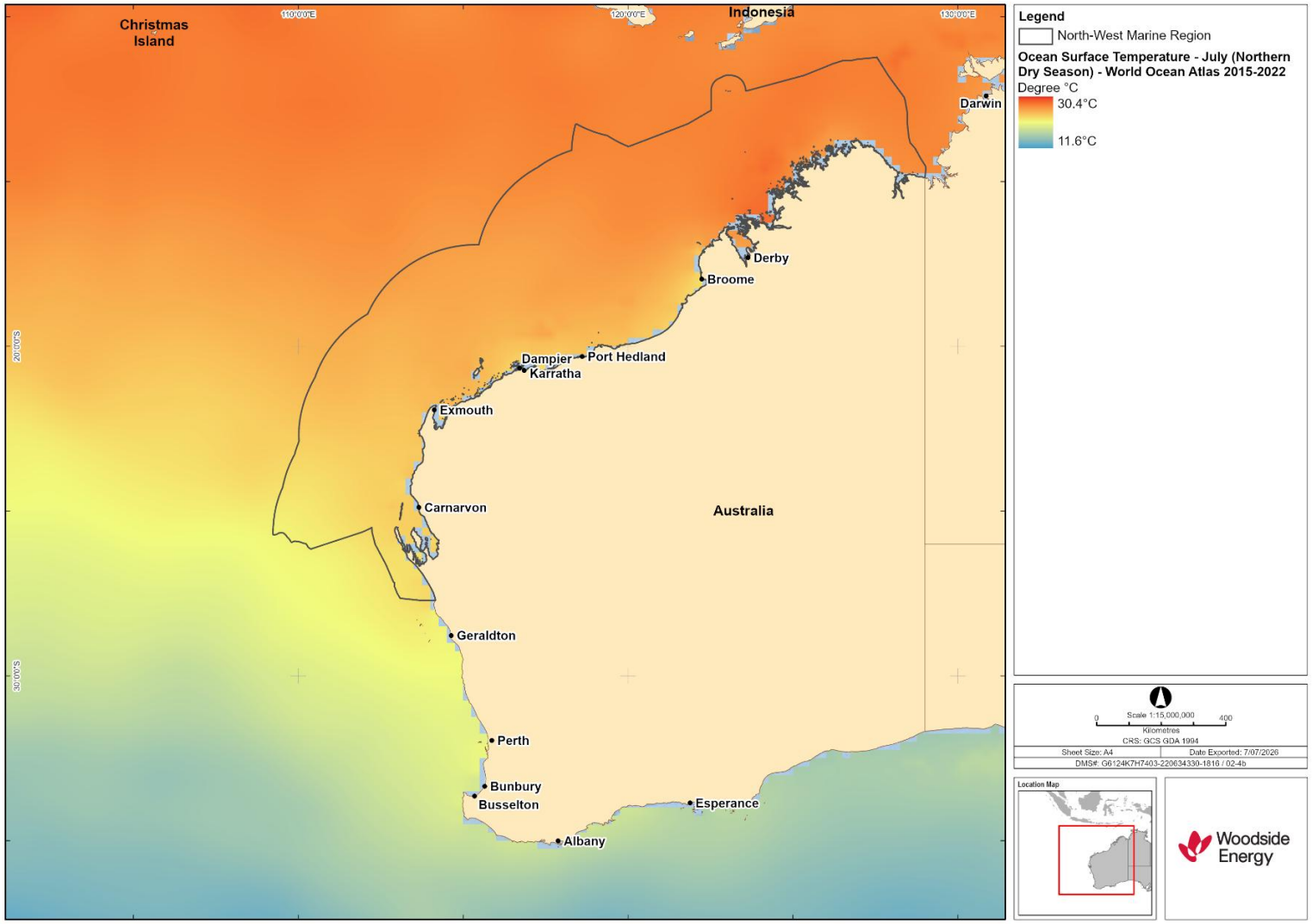


Figure 2-8: Ocean surface temperature for the NWMR – July, northern dry season

Source: Locarnini et al. *(2018), in World Ocean Atlas (2018)*

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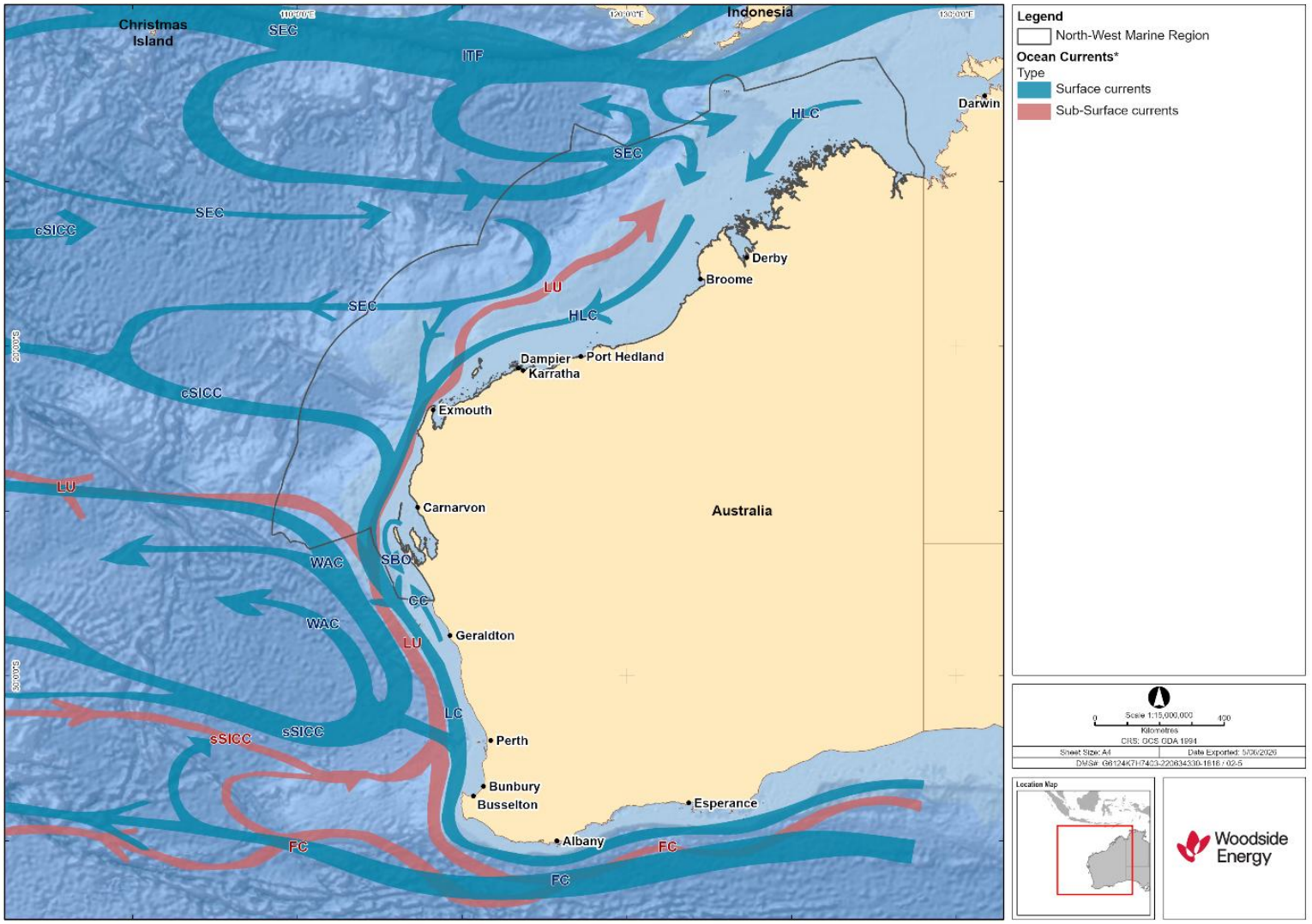


Figure 2-9: Ocean surface and sub-surface currents of the NWMR and wider region

Source: adopted from Wijeratne et al. *(2018)*

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2.3.1 Browse

Table 2-4 summarises the meteorological and oceanographic conditions for the Browse Basin, with supporting metocean data and figures provided in Appendix A.

Table 2-4: Summary meteorology and oceanography for Browse

Receptor	Description
Meteorology	
Seasonal patterns	The Browse area, overlapping the Kimberley marine system, experiences a tropical monsoon climate with moderate offshore cyclone activity (DEWHA 2007a). The region experiences two distinct seasons: the dry season from May to September and the northern wet season from October through to April. The wet season is Australia's peak time for tropical cyclones, rainfall and severe thunderstorms (BOM 2026c).
Air temperature	The mean annual air temperature recorded at Troughton Island between 1991 and 2020 ranged from 22.5ºC in July to 33.4ºC in November (BOM 2026c).
Rainfall	Mean rainfall recorded from Troughton Island in the Browse Basin between 1991 and 2020 ranged from a barely detectable (0.3 mm) mean monthly level in September to 274.8 mm in January (BOM 2026c).
Wind	The dry season experiences high-pressure systems that bring east to south-easterly winds with average wind speeds during the season of around 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 about 17 km/h and maximum gusts exceeding 100 km/h (generally associated with tropical cyclones (MetOcean Engineers 2005).
Oceanography	
Currents	Surface currents exhibit seasonal directionality, with flow to the south-west during March to June and more variable outside this period (Woodside, 2019). This is consistent with the stronger Leeuwin Current flow during winter months, with more variable currents driven by local wind stress during periods of weaker Leeuwin Current flow.

2.3.2 North West Shelf/Scarborough

Table 2-5 summarises the meteorological and oceanographic conditions for the NWS/Scarborough, with supporting metocean data and figures provided in Appendix B.

Table 2-5: Summary meteorology and oceanography for the North West Shelf and Scarborough

Receptor	Description
Meteorology	
Seasonal patterns	The NWS and Scarborough activity areas, overlapping the Pilbara marine system, experience a tropical arid climate with high cyclone activity. The monsoonal climate of the wider NWMR has a distinct wet and dry seasonal regime and transition periods between seasons (DEWHA 2007a).
Air temperature	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).
Rainfall	Rainfall patterns annually reveal the wet season with highest rainfalls during the late summer, often associated with the passage of tropical low-pressure systems and cyclones. Rainfall in the dry season is typically extremely low (Pearce *et al.* 2003 and Appendix B).
Wind	Winds are typically from the southwest during the wet season (summer) and tending from the south-east during the dry season (winter). The summer south-westerly winds are driven by high pressure cells that pass from west to east over the Australian continent. During the winter period, the relative position of the high-pressure cells shifts further north, leading to prevailing south-easterly winds from the mainland (Pearce *et al.* 2003 and Appendix B).

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Receptor	Description
Oceanography	
Currents	The large-scale ocean currents of the NWMR, primarily the Indonesian Throughflow and Leeuwin Current (and Holloway Current), are the primary influence on the NWS and Scarborough activity 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 summarises the meteorological and oceanographic conditions for the North West Cape, with supporting metocean data and figures in Appendix B.

Table 2-6: Summary meteorology and oceanography for the North West Cape

Receptor	Description
Meteorology	
Seasonal patterns	The North West Cape activity area, overlapping the Ningaloo-Leeuwin marine system, experiences a subtropical arid climate featuring 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, with seasonal winds being the more dominant influence on the marine environment in the region (DEWHA 2007a).
Air temperature	The mean annual air temperature recorded at Learmonth Airport between 1991 and 2020 ranged from a maximum temperature of 38°C in January to a mean minimum temperature of 11.5°C in July (BOM 2026d).
Rainfall	Rainfall typically occurs during the summer, with highest rainfall during later summer and autumn, The mean highest rainfall recorded from Learmonth Airport between 1991 and 2020 was 46.5 mm in June, and the lowest mean rainfall of 0.2 mm in October. These seasonal changes in rainfall are often associated with the passage of tropical low-pressure systems and cyclones (BOM 2026d).
Wind	Winds vary seasonally, generally from the south-west quadrant during summer months and the south-southeast quadrant during the autumn and winter months. The summer south-westerly winds are driven by high-pressure cells that pass from west to east over the Australian continent. Winds typically weaken and are more variable during the transitional period between the summer and winter seasons, generally between April to August.
Oceanography	
Currents	Surface currents exhibit seasonal directionality, with flow to the south-west during March to June and more variable outside this period (Woodside 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 the NWMR

Based on the Integrated Marine and Coastal Regionalisation of Australia Version 4.0, eight provincial bioregions occur within the NWMR, which are based on patterns of demersal fish diversity, benthic habitat and oceanographic data (Commonwealth of Australia 2006a) (Figure 2-10). Of the eight provincial bioregions that occur within the NWMR, these include four offshore (about 65% of total NWMR area) and four shelf (about 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 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 ten 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

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more than 5 km. A unique feature of the region is the significant narrowing of the continental shelf around North West Cape (about 7 km wide) from the broad continental shelf in the north of the region (about 400 km wide at Joseph Bonaparte Gulf) (DEWHA 2007a) (Figure 2-11).

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 2-12). In the region, mud content generally increases with water depth due to lower depositional energy, while grain-supported coral-rich sediments are more common on platform margins exposed to higher energy conditions (Gischler 2025). 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). In carbonate platform environments, similar to those of the NWMR, sediment redistribution can also be strongly affected by spur-and-groove systems, sand aprons and lagoonal circulation patterns, contributing to patchy and heterogeneous sediment facies across depth zones (Gischler 2025). This variation in bathymetry and interactions with oceanographic processes provides diverse habitats for 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 Southeast Asian regions (Vadrevu *et al.* 2014; Kim Oanh *et al.* 2018).

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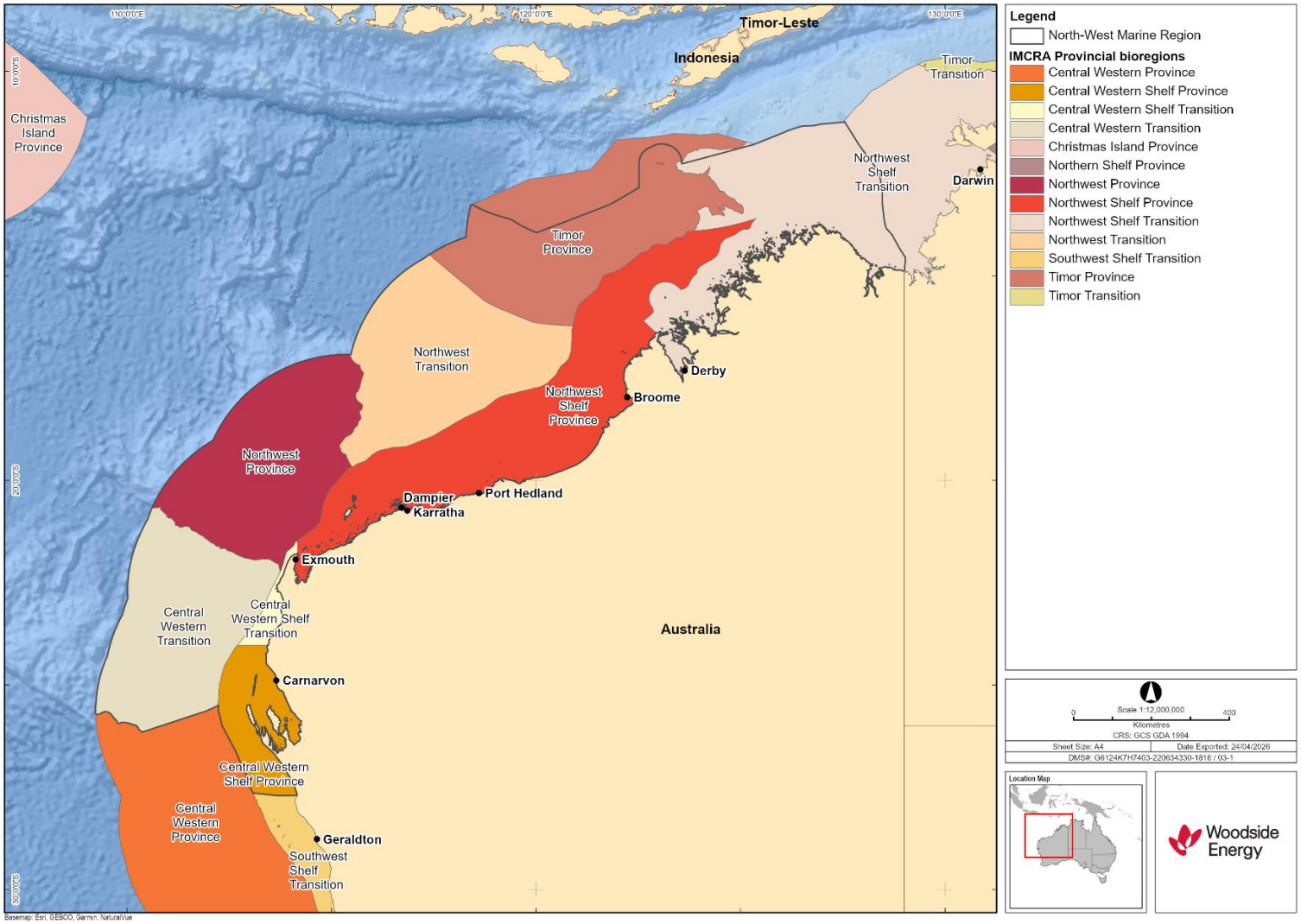


Figure 2-10: The eight provincial bioregions of the NWMR

Source: Geoscience Australia (2026), as per Integrated Marine and Coastal Regionalisation of Australia

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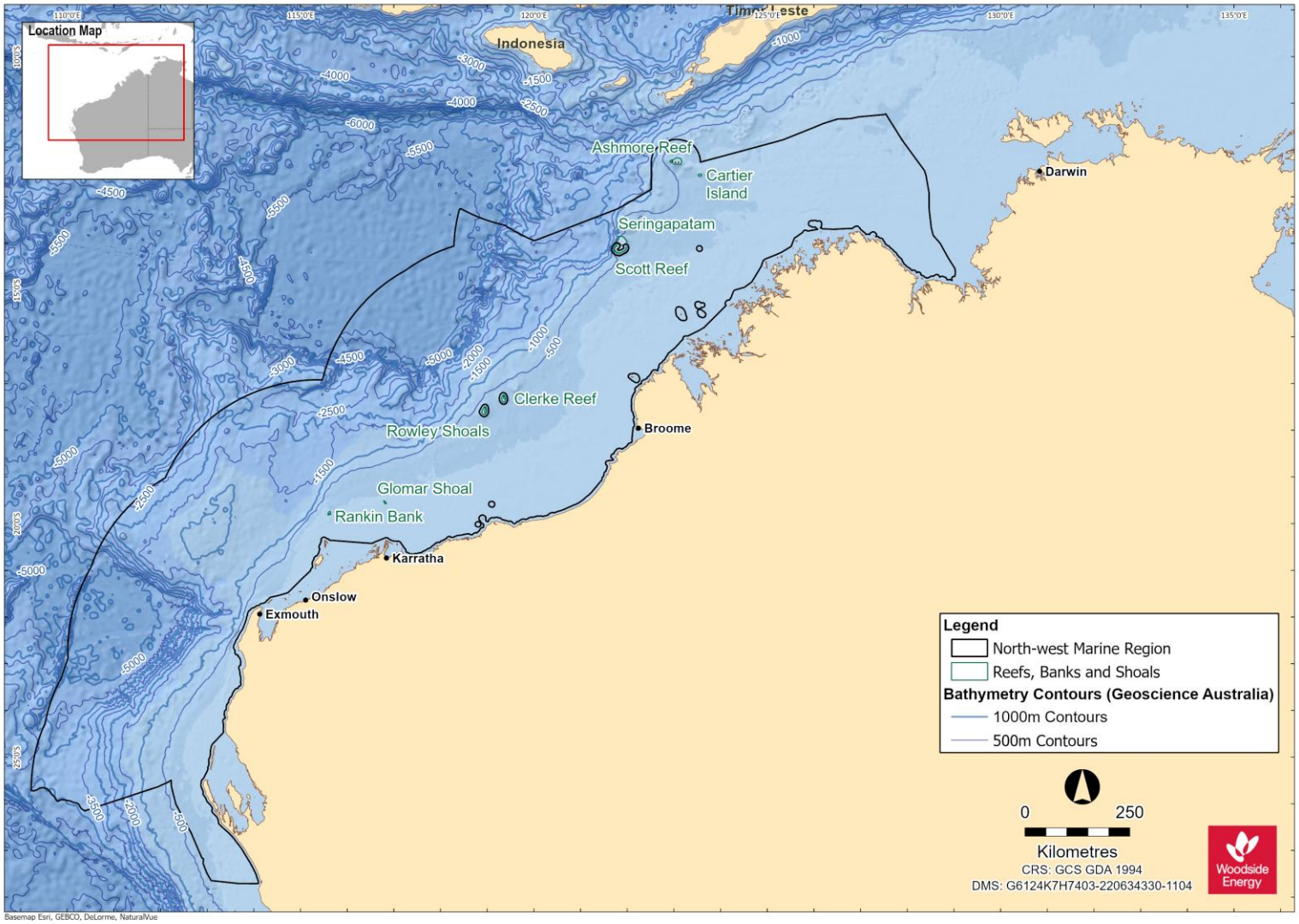


Figure 2-11: Bathymetry of the NWMR

Source: Geoscience Australia (2026)

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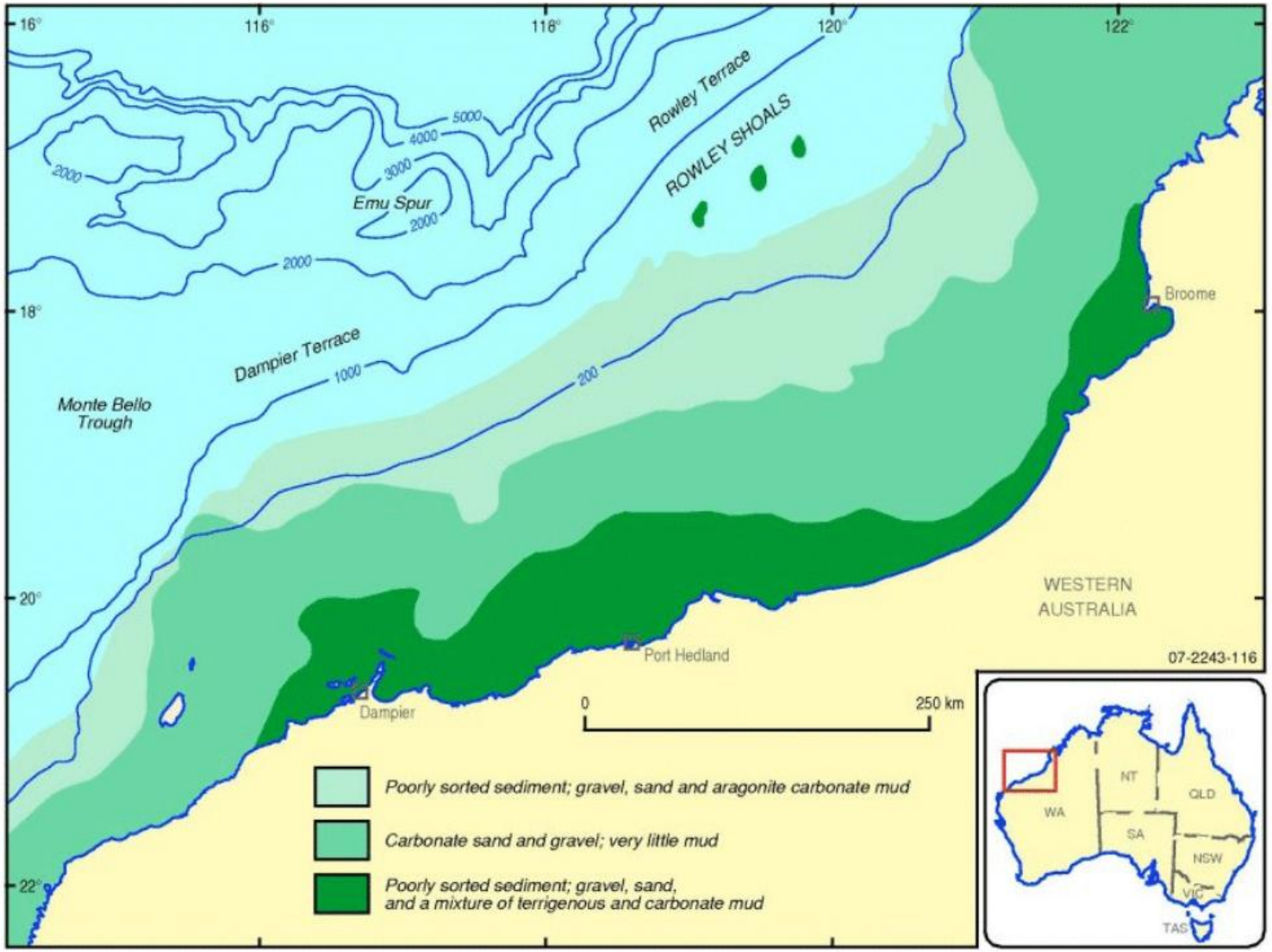


Figure 2-12: Overview of the seabed sediments of the NWMR

Source: Baker et al*. (2008)*

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3. MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE

3.1 Summary of matters of national environmental significance

The EPBC Act refers to living things (including plants and animals), habitats and places that need protecting as 'matters of national environmental significance'. There are nine MNES listed under the EPBC Act:

- World Heritage areas
- National Heritage places
- wetlands of international importance (listed under the Ramsar Convention)
- listed threatened species and listed ecological communities
- listed migratory species (protected under international agreements)
- Commonwealth marine areas
- Great Barrier Reef Marine Park
- nuclear actions (including uranium mines)
- water resources (relating to unconventional gas development and large coal mining development).

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." Habitat critical to the survival of a species is defined as 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 reintroducing populations or recovering the species or ecological community.

Habitat critical to the survival of species has been identified for marine turtles and marine mammals, and described in Sections 7.2.1.1 and 8.2.3, respectively.

This section summarises the MNES reported for the three bioregions: NWMR (Table 3-1), SWMR (Table 3-2) and NMR (Table 3-3). The summary is based on the PMST reports (Appendix A) and includes MNES that may occur within each bioregion.

The PMST uses a conservative, grid-based search methodology to determine the potential presence of MNES. For marine areas located more than 30 km offshore, this involves using 32 km × 32 km grid cells to identify spatial overlap with listed MNES. As a result, the PMST report (Appendix A) may identify MNES that do not directly intersect with the EMBA, including protected areas that have no coastal interface and terrestrial species. Accordingly, MNES identified in the PMST that are not associated with coastal environments, and species that do not rely on marine or shoreline habitats (for example, species with no marine foraging or life-cycle processes), have not been assessed further.

Additional information about these MNES for the NWMR, SWMR, and NMR is provided in subsequent sections (referenced in Table 3-1, Table 3-2 and Table 3-3, respectively).

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Table 3-1: Summary of matters of national environmental significance (MNES) identified by the EPBC Act Protected Matters Search Tool (PMST) within and potentially occurring within the NWMR

MNES	Number	Description	Section of this document
World Heritage properties	3	• Shark Bay • The Ningaloo Coast • Murujuga Cultural Landscape	Section 12 Section 13
National Heritage places	6	• Dampier Archipelago (including Burrup Peninsula) • Dirk Hartog Landing Site 1616 • Shark Bay • The Ningaloo Coast • The West Kimberley • HMAS Sydney II and HSK Kormoran Shipwreck Sites	Section 12
Wetlands of international importance (Ramsar)	4	• Ashmore Reef National Nature Reserve • Eighty Mile Beach • Ord River Floodplain • Roebuck Bay	Section 12
Commonwealth marine areas	5	• EEZ and Territorial Sea • Key ecological features (KEFs) • Australian Marine Parks (AMPs) • Australian Whale Sanctuary • Extended Continental Shelf	Section 12
Listed threatened ecological communities	2	• Monsoon vine thickets on the coastal sand dunes of Dampier Peninsula • Subtropical and temperate coastal saltmarsh	Section 12
Listed threatened species	73	Refer NWMR PMST report (Appendix A)	Section 6 to Section 9
Listed migratory species	100	Refer NWMR PMST report (Appendix A)	Section 6 to Section 9

Table 3-2: Summary of MNES identified by the EPBC Act PMST within and potentially occurring within the SWMR

MNES	Number	Description	Section of this document
World Heritage properties	0	N/A	Appendix A
National Heritage places	4	• Batavia Shipwreck Site • Cheetup Rock Shelter • HMAS Sydney II and HSK Kormoran • Fitzgerald River National Park	Appendix A
Wetlands of international importance (Ramsar)	3	• Becher Point Wetlands • Peel-Yalgorup System • Vasse-Wonnerup System	Appendix A

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MNES	Number	Description	Section of this document
Commonwealth marine areas	5	• EEZ and Territorial Sea • KEFs • AMPs • Australian Whale Sanctuary • Extended Continental Shelf	Appendix A
Listed threatened ecological communities	7	• Banksia woodlands of the Swan Coastal Plain • Empodisma peatlands of southwestern Australia • Honey myrtle shrubland on limestone ridges of the Swan Coastal Plain bioregion • Proteaceae dominated kwongkan shrublands of the Southeast Coastal Floristic Province of Western Australia • Sedgelands in Holocene dune swales of the southern Swan Coastal Plain • Subtropical and temperate coastal saltmarsh • Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain	Appendix A
Listed threatened species	65	Refer SWMR PMST report	Appendix A
Listed migratory species	85	Refer SWMR PMST report	Appendix A

Table 3-3: Summary of MNES identified by the EPBC Act PMST within and potentially occurring within the NMR

MNES	Number	Description	Section of this document
World Heritage properties	1	Kakadu National Park	Appendix A
National Heritage places	1	Kakadu National Park	Appendix A
Wetlands of international importance (Ramsar)	2	• Kakadu National Park • Coburg Peninsula	Appendix A
Commonwealth marine areas	5	• EEZ and Territorial Sea • KEFs • AMPs • Australian Whale Sanctuary • Extended Continental Shelf	Appendix A
Listed threatened ecological communities	0	N/A	N/A
Listed threatened species	46	Refer NMR PMST report	Appendix A
Listed migratory species	79	Refer NMR PMST report	Appendix A

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3.2 Part 13 statutory instruments for Environment Protection and Biodiversity Conservation 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 assessing 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 (such as marine turtles) and with BIAs (overlapping the marine environment) for any listed threatened or migratory species as reported in the PMST searches
- published literature, unpublished reports and credible anecdotal information (such as feedback from stakeholders) indicating species presence or occurrence within the Woodside activity areas
- temporal overlap between the likely timing of petroleum activities and peak periods for key critical life stage behaviours (for example, 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 (such as anthropogenic noise, light emissions, marine debris).

Table 3-4 lists relevant EPBC Act threatened and migratory species and their Part 13 statutory instruments. 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 evaluating impacts or risks for Woodside activities

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)
Fishes, sharks, rays and sawfishes	
All sawfishes (largetooth, green, dwarf, speartooth, narrow)	Sawfish and River Sharks Multispecies Recovery Plan (Commonwealth of Australia 2015b)
Grey nurse shark (west coast population)	Recovery Plan for the Grey Nurse Shark (*Carcharias taurus*) 2014 (Department of the Environment (DoE) 2014a)
Largetooth sawfish	Conservation Advice for *Pristis pristis* (largetooth sawfish) (DCCEEW 2025a)
Little gulper shark, southern dogfish	Commonwealth Listing Advice on *Centrophorus zeehaani* (southern dogfish) (Threatened Species Scientific Committee 2013a)
Northern river shark	Conservation Advice for *Glyphis garricki* (northern river shark) (DoE 2014b)
Scalloped hammerhead	Listing Advice for *Sphyrna lewini* (scalloped hammerhead) (Threatened Species Scientific Committee 2024)
Speartooth shark	Approved Conservation Advice for *Glyphis glyphis* (speartooth shark) (DoE 2014c)
White shark	Recovery Plan for the White Shark (*Carcharodon carcharias*) 2013 (DSEWPaC 2013b)
Whale shark	Conservation Advice *Rhincodon typus* whale shark (Threatened Species Scientific Committee 2015d)
Marine reptiles	
All marine turtle species (loggerhead, green, leatherback, hawksbill, flatback, olive ridley)	Recovery Plan for Marine Turtles in Australia 2017–2027 (Commonwealth of Australia 2017) National Light Pollution Guidelines for Wildlife Including Marine Turtles, Seabirds and Migratory Shorebirds (DCCEEW 2023j)
Dusky sea snake	Conservation Advice for *Aipysurus fuscus* (dusky sea snake) (DCCEEW 2024m)
Leaf-scaled sea snake	Approved Conservation Advice for *Aipysurus foliosquama* (leaf-scaled sea snake) (DSEWPaC 2011b)
Leatherback turtle	Approved Conservation Advice for *Dermochelys coriacea* (*leatherback turtle*) (DEWHA 2009c)

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Species	EPBC Act Part 13 statutory instrument
Mertens' water monitor	Conservation Advice for *Varanus mertensi* (Mertens' water monitor) (DCCEEW 2023i)
Mitchell's water monitor	Conservation Advice for *Varanus mitchelli* (Mitchell's water monitor) (DCCEEW 2023c)
Short-nosed sea snake	Approved Conservation Advice for *Aipysurus apraefrontalis* (short-nosed sea snake) (DSEWPaC 2011a)
Marine mammals	
Australian sea lion	Recovery Plan for the Australian Sea Lion (*Neophoca cinerea*) 2013 (DSEWPaC 2013a) Conservation Advice *Neophoca cinerea* Australian Sea Lion (Threatened Species Scientific Committee 2020) (in effect under the EPBC Act from 23 December 2020)
Australian snubfin dolphin	Conservation Advice for *Orcaella heinsohni* (Australian snubfin dolphin) (DCCEEW 2025d)
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)
Fin whale	Conservation Advice *Balaenoptera physalus* fin whale (Threatened Species Scientific Committee 2015c)
Humpback whale	Listing Advice *Megaptera novaeangliae* Humpback Whale (Department of Agriculture, Water and the Environment (DAWE) 2022)
Indo-Pacific humpback dolphin (Australian humpback dolphin)	Conservation Advice for *Sousa sahulensis* (Australian humpback dolphin) (DCCEEW 2025e)
Sei whale	Conservation Advice *Balaenoptera borealis* sei whale (Threatened Species Scientific Committee 2015a)
Southern right whale	National Recovery Plan for the Southern Right Whale *Eubalaena australis* (DCCEEW 2024a)
Seabirds	
All 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 2023j)
All albatrosses and petrels	National Recovery Plan for albatrosses and petrels (DCCEEW 2022)
Amsterdam albatross	EPBC Act Threat Abatement Plan for the incidental catch (or bycatch) of seabirds during oceanic longline fishing operations (Commonwealth of Australia 2018)
Australian fairy tern	National Recovery Plan for the Australian Fairy Tern *Sternula nereis nereis* (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 (Department of Environment and Energy (DoEE) 2018)
Australian lesser noddy	Conservation Advice *Anous tenuirostris melanops* 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 (ha) (DEWHA 2009a)
Bridled tern	EPBC Act Threat abatement plan for predation by the European red fox (DEWHA 2008b)
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)
Christmas Island white-tailed tropic bird	Conservation Advice for *Phaethon lepturus fulvus* (golden bosun) (DCCEEW 2026f)

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Species	EPBC Act Part 13 statutory instrument
Flesh-footed shearwater	EPBC Act Threat Abatement Plan for the incidental catch (or bycatch) of seabirds during oceanic longline fishing operations (Commonwealth of Australia 2018) EPBC Act Threat Abatement Plan for predation by feral cats (DoE 2024) EPBC Act Threat abatement plan for predation by the European red fox (DEWHA 2008b) EPBC Act Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans (DoEE 2018) EPBC Act Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans (DoEE 2018)
Little tern	Conservation Advice for *Sternula albifrons* (little tern) (DCCEEW 2025c)
Little shearwater	EPBC Act Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans (DoEE 2018) EPBC Act Threat Abatement Plan to reduce the impacts of exotic rodents on biodiversity on Australian offshore islands of less than 100,000 ha (DEWHA 2009)
Masked booby	EPBC Act Threat Abatement Plan to reduce the impacts of exotic rodents on biodiversity on Australian offshore islands of less than 100,000 ha (DEWHA 2009)
Sooty tern	
Soft-plumaged petrel	Conservation Advice *Pterodroma mollis* soft-plumaged petrel (Threatened Species Scientific Committee 2015f)
Wedge-tailed shearwater	EPBC Act Threat Abatement Plan for the incidental catch (or bycatch) of seabirds during oceanic longline fishing operations (Commonwealth of Australia 2018) EPBC Act Threat Abatement Plan for predation by feral cats (DoE 2024) EPBC Act Threat Abatement Plan for predation by the European red fox (DEWHA 2008b) EPBC Act Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans (DoEE 2018)
Wilson's storm petrel	EPBC Act Threat Abatement Plan for predation by feral cats (DoE 2024) EPBC Act Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans (DoEE 2018) EPBC Act Threat Abatement Plan to reduce the impacts of exotic rodents on biodiversity on Australian offshore islands of less than 100,000 ha (DEWHA 2009)
Common noddy	EPBC Act Threat Abatement Plan for predation by feral cats (DoE 2024)
Caspian tern	
Greater crested tern	
Lesser frigatebird	
Streaked shearwater	
White-tailed tropicbird	
Red-tailed tropicbird (Indian Ocean)	Conservation Advice for *Phaethon rubricauda westralis* (Indian Ocean red-tailed tropicbird) (DCCEEW 2023h)
Shorebirds	
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 Including Marine Turtles, Seabirds and Migratory Shorebirds (DCCEEW 2023j)
Asian dowitcher	Conservation Advice for *Limnodromus semipalmatus* (Asian dowitcher) (DCCEEW 2024h)
Australian painted snipe	Conservation Advice *Rostratula australis* Australian painted snipe (Threatened Species Scientific Committee 2013b)
Bar-tailed godwit (menzbieri)	Conservation Advice *Limosa lapponica menzbieri* Bar-tailed godwit (northern Siberia) (DCCEEW 2024c)
Black-tailed godwit	Conservation Advice for *Limosa limosa* Black-tailed godwit (DCCEEW 2024f)

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Species	EPBC Act Part 13 statutory instrument
Common greenshank	Conservation Advice for *Tringa nebularia* (common greenshank) (DCCEEW 2024g)
Curlew sandpiper	Conservation Advice *Calidris ferruginea* Curlew sandpiper (DCCEEW 2023e)
Eastern curlew	Conservation Advice *Numenius madagascariensis* Far eastern curlew (DCCEEW 2023d)
Great knot	Conservation Advice *Calidris tenuirostris* Great knot (DCCEEW 2024e)
Greater sand plover	Conservation Advice *Charadrius leschenaultia* Greater sand plover (DCCEEW 2023f)
Grey plover	Conservation Advice for *Pluvialis squatarola* (grey plover) (DCCEEW 2024l)
Lesser sand plover	Conservation Advice *Charadrius mongolus* Lesser sand plover (Threated Species Scientific Committee, 2016)
Little curlew	EPBC Act Threat Abatement Plan for predation by the European red fox (DEWHA 2008b)
Pacific golden plover	EPBC Act Threat Abatement Plan for predation by feral cats (DoE 2024)
Red-necked stint	
Red knot	Conservation Advice *Calidris canutus* Red knot (DCCEEW 2024d)
Ruddy turnstone	Conservation Advice for *Arenaria interpres* (ruddy turnstone) (DCCEEW 2024i)
Sharp-tailed sandpiper	Conservation Advice for *Calidris acuminata* (sharp-tailed sandpiper) (DCCEEW 2024j)
Terek sandpiper	Conservation Advice for *Xenus cinereus* (terek sandpiper) (DCCEEW 2024k)

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4. BIOLOGICAL COMMUNITIES

4.1 Regional context

The NWMR is characterised by shallow-water tropical marine ecosystems and features high species richness. The southern extent of the NWMR transitions between tropical and temperate waters and includes some species that are found in the SWMR. High diversity is driven by the interaction with seafloor features in addition to the currents in the NWMR, which support unique ecosystems and trophic interactions. The strong seasonality in wind direction and rainfall is another key driver on the ecological processes in the region. The weakening of the Indonesian Throughflow and Leeuwin Current in the dry season, along with the seasonal wind reversal and cyclones, drives biological productivity by mixing deeper, cold nutrient-rich waters with the surface waters (DSEWPaC 2012a).

The SWMR has high biodiversity and a high number of species endemic to the region. Factors that contribute to the high level of biodiversity and endemism in the region include the long stable period of geological oscillation, persistent high energy environment, warm-water intrusion by the Leeuwin Current, and areas in the east of the SWMR where cold nutrient-rich waters rise from the deep ocean to the surface. The low-nutrient environment of the SWMR leads to clear waters and high levels of light penetration, giving rise to a high diversity of seagrass, algal and benthic communities. Biological productivity of the SWMR is low in global standards in comparison to other Australian marine regions due to the low-nutrient tropical waters carried south by the Leeuwin Current, and its effect in supressing the upwelling of deeper nutrient-rich cold waters, in addition to the absence of nutrient runoff from significant rivers. Small seasonal upwellings occur regularly at known locations and, because of the overall absence of nutrients in the region, these productivity locations have a disproportionate effect on the region's ecosystems. These eddies can be either upwelling, which enhances local biological productivity where they form, or downwelling, which concentrates and transports communities away from the coast (DSEWPaC 2012b).

The NMR is known for its high diversity of tropical species but relatively low endemism. The high diversity and low endemism are thought to be due to the vast species-rich biogeographic ocean zone that stretches from the western Pacific to the east coast of Africa, and is thought to have few physical barriers for species dispersal. Most of the NMR endemic species do not have a long-lived pelagic larval stage, which promotes long-distance travel across deeper waters. The NMR is primarily influenced by tidal flows rather than ocean currents. Tidal movement in the region is complex due to the barrier of islands and submerged reefs in the Torres Strait, which hinder tidal energy. The Indonesian Throughflow and surface-driven currents in the region are likely to influence nutrients, pelagic dispersal, and species and biological productivity in the NMR (DSEWPaC 2012c).

4.2 Biological productivity of the 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 (Brewer *et al.* 2007). Cyclones and north-westerly winds during the north-west wet season (Brewer *et al.* 2007) (around October to April (BOM 2026a)) facilitate the upwelling and mixing of nutrients from deepwater to shallow water environments (Brewer *et al.* 2007).

The Indonesian Throughflow 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 Indonesian Throughflow is weaker the thermocline lifts, bringing deeper, more nutrient-rich waters into the photic zone and 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 Indonesian Throughflow, 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

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water depths of 400 m and 1,000 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 caused by cyclones generally last between one and two weeks, and it is believed 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 can 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 use 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 about half of the nutrients available are used by microzooplankton (such as protozoa), with the remainder going to macro and meso-zooplankton (such as copepods). As primary and secondary consumers, gelatinous zooplankton (such as salps and 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 chlorophyll (and thus phytoplankton) levels are low in summer months (December to March) and higher in 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 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 (such as copepods, euphausiids) and 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 (Department of Conservation and Land Management (CALM) 2005a), can occur throughout the year.

Spatial and temporal patterns in the distribution and abundance of macro-zooplankton on the NWS 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). Buenafe *et al.* (2025) analysed near-global larval distribution data for 15 taxa of large pelagic fishes and used habitat-suitability models to infer broad-scale spawning patterns, including for key species of management relevance such as skipjack tuna (*Katsuwonus pelamis*), southern bluefin tuna (*Thunnus maccoyii*), other tropical and subtropical tunas (*Thunnus* spp.), and billfishes (such as marlins and swordfish). The study identified consistent seasonal and regional structure in spawning, with modelled spawning habitat for several of these species occurring off northwest Australia, particularly during the wetter months in spring and summer. This overlap suggests the oceanographic conditions in parts of the NWMR are favourable for early life stages and reproduction of large pelagic fishes (Buenafe *et al*. 2025).

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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 (such as bacteria), whereas shelf waters are dominated by larger taxa such as diatoms (Hanson *et al.* 2007). Communities of phytoplankton in oligotrophic tropical waters, such as those around Scott Reef, are usually dominated by picoplankton. Particularly, the marine cyanobacteria genera Prochlorococcus and Synechococcus (Brinkman *et al.* 2009a). Estimates of the phytoplankton biomass (measured as chlorophyll a) near Scott Reef are about twice that of open waters (sampled more than 50 km south-west of South Scott Reef). The open water location sampled is likely to be representative of the general outer shelf pelagic environment, and so is representative of the oceanic waters of the area. This difference is considered to most likely reflect the enhanced vertical mixing of nutrients into the surface layer around Scott Reef through interactions between the local hydrodynamics and the local topography (Brinkman *et al.* 2009a).

Zooplankton within the activity area may include organisms that complete their life cycle as plankton and 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 (roughly equates to the Browse activity area) (Sutton *et al.* 2019). However, small-scale topographically associated current movements, tidal pumping, eddies and upwellings are thought to occur, which transport cooler, nutrient-rich water to specific locations, including reefs and shallow ecosystems, which result in ‘productivity hotspots’ (Sutton *et al.* 2019; Green *et al.* 2019). Similarly, internal waves, generated at the shelf break (for example, 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. 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 (Sutton *et al.* 2019).

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 draw deeper cooler waters into the photic zone, stir up nutrients and trigger primary productivity. Broadly, the greatest productivity within this subsystem is found around the 200 m isobath associated with the shelf break (Brewer *et al.* 2007). Overall, productivity across the NWS is maintained through strong nutrient recycling and offshore inputs. Cyanobacteria are an important primary producer in the region, with other primary producers such as diatoms increasing in abundance during nutrient influxes in the area. Along the Pilbara coast and Dampier Archipelago, mean levels of chlorophyll and nutrients are locally elevated, suggesting a high level of primary producer productivity in these areas. Inshore waters of the Pilbara coast and Dampier Archipelago feature high turbidity, strong tidal activity, and detritus inputs that increase primary productivity in the region (Brewer *et al.* 2007).

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).

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5. BENTHIC COMMUNITIES AND HABITATS

5.1 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).

Table 5-1, Table 5-2 and Table 5-3 summarise the benthic communities and habitats that are representative of the broader NWMR, SWMR and NMR, respectively. While the next subsections are focused on the primary features of relevance to the activity areas within the NWMR, mainly the offshore habitats of the continental shelf and slope, submerged shoals and banks, and remote oceanic reef systems that are of recognised conservation value.

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Table 5-1: Benthic communities and habitats within the NWMR

Habitat/community	Kimberley	Pilbara	Ningaloo-Leeuwin
Offshore habitats and biological communities			
Soft sediment with infauna	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.		
Soft sediment with hard substrate outcropping	A unique seafloor feature combining both soft sediment and hard substrates, including outcrops, terraces, continental slope and escarpments. This habitat is found in offshore areas of the NWMR, often associated with KEFs such as the Ancient Coastline at 125 m Depth Contour 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	• Ancient coastline at 125 m depth contour KEF • Continental slope demersal fish communities KEF
Coral reef	Coral reef habitats within the NWMR have a high species diversity that includes corals, and associated reef species such as fishes, crustaceans, invertebrates and algae. Coral reef habitats of the offshore environment of the NWMR include remote oceanic reef systems, large platform reefs,and 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 • Montebello, Lowendal and Barrow Island groups	N/A
Seagrass and macroalgae communities	Seagrass beds and benthic macroalgae reefs are a main food source for many marine species and provide key habitats and nursery grounds (Heck *et al.* 2003; Wilson *et al.* 2010). In the northern half of WA, these habitats are restricted to sheltered and shallow waters, including around offshore reef systems, due to large tidal movement, high turbidity, cyclones and large seasonal freshwater runoff.		
	• Scott Reef, Seringapatam Reef, Ashmore Reef • Rowley Shoals (including Mermaid Reef, Clerke Reef, Imperieuse Reef)	Montebello, Lowendal and Barrow Island groups	N/A

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Habitat/community	Kimberley	Pilbara	Ningaloo-Leeuwin
Filter feeders/ heterotrophic	Filter feeder epifauna such as sponges, ascidians, soft corals and gorgonians are animals that feed by actively filtering suspended matter and food particles from water by passing the water over specialised filtration structures (DEWHA 2008a). 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
Sandy beaches	Sandy beaches are dynamic environments, naturally fluctuating in response to external forcing factors such as waves and currents. 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, Lowendal and Barrow Island groups	N/A
Nearshore/coastal habitats and biological communities			
Coral reef	Coral reef habitats typically found in nearshore regions of the NWMR include the fringing reefs around coastal islands and the mainland shore.		
	• Kimberley • East Holothuria and Long reefs • Bonaparte and Buccaneer Archipelagos • Montgomery Reef • Adele Complex (Beagle, Mavis, Albert, Churchill reefs, Adele Island)	• Dampier Archipelago • Inshore Pilbara Islands (Northern, Middle and Southern)	• Ningaloo Reef • Muiron Islands • Exmouth Gulf • Shark Bay
Seagrass and macroalgae communities	Seagrass beds and benthic macroalgae reefs are a main food source for many marine species and 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, cyclones and large seasonal freshwater runoff. These areas include in bays and sounds and around reef and island groups.		
	King Sound	• Roebuck Bay • Dampier Archipelago	• Ningaloo Reef • Exmouth Gulf • Shark Bay

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Habitat/community	Kimberley	Pilbara	Ningaloo-Leeuwin
Filter feeders/ heterotrophic	Filter feeder epifauna such as sponges, ascidians, soft corals and gorgonians are animals that feed by actively filtering suspended matter and food particles from water by passing the water over specialised filtration structures (DEWHA 2007a). Filter feeders generally live in areas that have strong currents and hard substratum. Conversely, higher diversity infauna 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.		
	• Scott Reef • Rowley Shoals	Deeper habitats of Rankin Bank and Glomar Shoal	Deeper habitats of Ningaloo Reef and the protected sponge zone in the south
Mangroves	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). In regions like the NWMR, mangroves can frequently occur at their physiological limits due to the high temperatures, hypersaline conditions and low humidity. Their condition can fluctuate with climate, with periods of increased rainfall supporting improved growth and dispersal. Mapping of the Pilbara coastline shows mangroves form a relatively stable component of a broader intertidal environment, occupying about 16% of the intertidal zone over the past two decades, and functioning as an important ecological connector between adjacent saltmarshes, cyanobacterial mats and subtidal habitats (Hickey *et al.* 2025). Mangroves are confined to shoreline habitats, in nearshore areas of the NWMR.		
	Dampier Peninsula (including Carnot Bay, Beagle Bay and Pender Bay)	• Pilbara coastline (including Ashburton River Delta, Coolgra Point, Robe River Delta, Yardie Landing, Yammadery Island and the Mangrove Islands) • Montebello, Lowendal and Barrow Island groups • Roebuck Bay	• Shark Bay • Mangrove Bay, Cape Range Peninsula • Exmouth Gulf
Saltmarshes	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.		
	N/A	• Eighty Mile Beach • Roebuck Bay	Shark Bay

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Habitat/community	Kimberley	Pilbara	Ningaloo-Leeuwin
Sandy beaches	Sandy beaches are dynamic environments, naturally fluctuating in response to external forcing factors such as waves and currents. 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 provide an important habitat for turtle nesting and breeding. They are located along many coastlines of the nearshore environments of the NWMR.		
	• Cape Domett • Lacrosse Island	• Eighty Mile Beach • Eco Beach • Dampier Archipelago • Inshore Pilbara Islands (Northern, Middle and Southern)	• Ningaloo Coast • Muiron Islands • Exmouth Gulf

Table 5-2: Benthic communities and habitats within the SWMR

Habitat/community	Location
Offshore	
Soft sediment with infauna	Most of the SWMR seafloor is composed of soft unconsolidated sediments, but due to large variations in bathymetry there are marked differences in sedimentary composition and benthic assemblage structure across the region. Despite the prevalence of these habitats in the SWMR, very little is known about the composition or distribution of the region's sedimentary infauna (DEWHA 2008ba).
Soft sediment with hard substrate outcropping	A unique seafloor feature combining both soft sediment and hard substrates, including outcrops, terraces, continental slope and escarpments.
	• Perth Canyon Marine Park • Ancient coastline at 90 to 120 m depth contour KEF • Diamantina Fracture Zone • Naturaliste Plateau
Coral reef	To date, studies and understanding of the corals within the SWMR have concentrated on the shallow water areas in State waters. Within the deeper Commonwealth waters of the SWMR, little is known of the distribution of corals.
Filter feeders/ heterotrophic	Filter-feeder epifauna such as sponges, ascidians, soft corals and gorgonians are animals that feed by actively filtering suspended matter and food particles from water by passing the water over specialised filtration structures (Department of the Environment and Water Resources (DEWR) 2007). Filter feeders generally inhabit deeper habitats (below the photic zone) that have strong currents and hard substratum.
	• Ancient coastline at 90 to 120 m depth contour KEF • Diamantina Fracture Zone Naturaliste Plateau • Perth Canyon Marine Park • South-west Corner Marine Park

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Habitat/community	Location
Nearshore	
Coral reef	The northern extent of the SWMR coincides loosely with the disappearance of abundant and diverse coral from coastal habitats. To the south of Shark Bay, abundant corals occur predominantly around offshore islands, with corals at inshore sites occurring in very isolated patches of non-reef coral communities, usually of reduced species richness.
	• Houtman Abrolhos Islands • Rottnest Island
Seagrass and macroalgae communities	Within the SWMR, macroalgae and seagrass communities are noted for their extent, species richness and endemism. The clear waters of the region allow light to reach greater depths, with some species found at much greater depths than usual (down to 120 m) (DEWR 2007). Of the known species, there are more than 1,000 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. Macrophytes in southwest WA are abundant on shallow-water rock platforms and tidal pools, where these habitats support diverse, high-energy coastal communities (Tremblin *et al.* 2025). These environments, which are characteristic of higher-latitude sections of the region, support a wide variety of algal assemblages that provide structural complexity and microhabitats for numerous marine species. The presence of articulate coralline algae (such as *Amphiroa gracilis*), typically occurring among diverse macrophyte stands, illustrates the rich algal cover characteristic of these shallow, wave-exposed environments (Tremblin *et al.* 2025).
	• 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
Filter feeders/ heterotrophic	Filter-feeder epifauna such as sponges, ascidians, soft corals and gorgonians are animals that feed by actively filtering suspended matter and food particles from water by passing the water over specialised filtration structures (DEWR 2007). Filter feeders generally live in areas that have strong currents and hard substratum.
	• Houtman Abrolhos Islands • Recherche Archipelago

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Habitat/community	Location
Mangroves	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
Sandy beaches	Sandy beaches within the SWMR are important for both resident and migratory seabirds and shorebirds, and can host breeding populations of the Australian sea lion. They are found along many coastlines of the nearshore environments of the SWMR. In addition, beaches in the SWMR provide a variety of socioeconomic 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 5-3: Benthic communities and habitats within the NMR

Habitat/community	Location
Offshore habitats and biological communities	
Soft sediment with infauna	Most of the offshore environment of the NMR is characterised by relatively flat expanses of soft sediment seabed. The soft sediments of the region are characterised by moderately abundant and diverse communities of infauna and mobile epifauna dominated by polychaetes, crustaceans, molluscs and echinoderms.
Soft sediment with hard substrate outcropping	A unique seafloor feature combining both soft sediment and hard substrates, including outcrops, terraces, continental slope and escarpments. The variability in substrate composition may contribute to the presence of unique ecosystems. Species include sponges, soft corals and other sessile filter feeders associated with hard substrate sediments.
	• Carbonate bank and terrace system of the Van Diemen Rise KEF • Pinnacles of the Bonaparte Basin KEF
Coral reef	Offshore coral reefs within the NMR are generally associated with a series of submerged shoals and banks. The shoals and 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

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Habitat/community	Location
Filter feeders/ heterotrophic	Filter-feeder epifauna such as sponges, ascidians, soft corals and gorgonians are animals that feed by actively filtering suspended matter and food particles from water by passing the water over specialised filtration structures (DEWHA 2007b). Filter feeders generally live in areas that have strong currents and hard substratum, and typically associated with the deeper habitats of the submerged shoals and banks, and canyon features.
	• Carbonate bank and terrace system of the Van Diemen Rise KEF • Pinnacles of the Bonaparte Basin KEF • Tributary Canyons of the Arafura Depression KEF • Evans Shoal • Tassie Shoal • Goodrich Bank
Nearshore	
Coral reef	Within the NMR corals occur both as reefs and in non-reef coral communities. Nearshore reefs include patch reefs and fringing reefs sparsely distributed within the region. Coral reefs within the NMR 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.
	• Submerged coral reefs of the Gulf of Carpentaria KEF • Darwin Harbour
Seagrass and macroalgae communities	Seagrasses provide key habitats in the NMR. They stabilise coastal sediments and trap and recycle nutrients. They provide nursery grounds for commercially harvested fish and prawns and provide feeding grounds for dugongs and green turtles. Seagrass distribution in the region is largely associated with sheltered small bays and inlets, including shallow waters surrounding inshore islands.
	• Field Island • The mainland coastline adjacent to Kakadu National Park
Filter feeders/ heterotrophic	Filter-feeder epifauna such as sponges, ascidians, soft corals and gorgonians are animals that feed by actively filtering suspended matter and food particles from water by passing the water over specialised filtration structures (DEWHA 2007b). Filter feeders generally inhabit areas that have strong currents and hard substratum.
	Cape Helveticus
Mangroves	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

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Habitat/community	Location
Sandy beaches	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

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5.2 Key benthic communities and habitats of the NWMR

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 habitat types has the potential to support different flora and fauna assemblages due to the different physical factors (such as waves, tides, light) influencing the habitat.

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 subtropical 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 spare benthic biota.

Comprehensive surveys and documentation of habitats and biota from the shelf to deep waters (100 m to 1,000 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 (about 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, were 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 to −1,000 m (Williams *et al.* 2010).

With reference to the NWS, 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 (Australian Institute of Marine Science (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). Table 5-1 summarises the key habitats and biological communities that are representative of the broader NWMR.

There is a marked biodiversity gradient from high ecologically 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), except the submerged shoal features, remote oceanic reef systems of the Rowley Shoals, Scott Reef and Ashmore Reef, the submerged shoals of Glomar Shoal and Rankin Bank in the NWS, in addition to 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. The next subsections present a brief overview of the high valued biodiversity reef and mesophotic habitats and associated benthic communities.

Table 11-1 details the 13 KEFs within the NWMR ,as identified by the PMST (Appendix A). Table 12-4 describes protected areas of the NWMR.

5.2.1 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; 2023); see Figure 5-1. 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. It provides unprecedented understanding of the background (baseline) changes at oceanic reefs on Australia's NWS, encompassing the physical drivers and the underlying processes of change (impact and recovery) from acute disturbances (cyclones, heat stress causing coral mass-bleaching).

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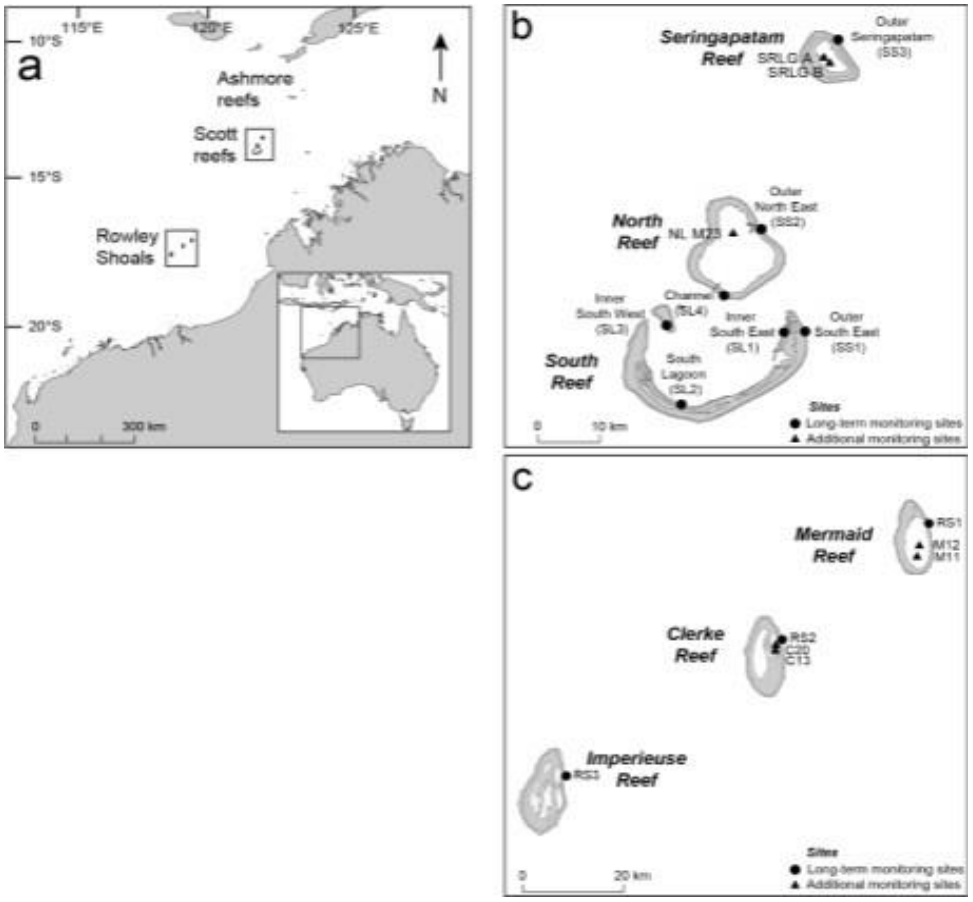


Figure 5-1: The position of Scott Reef, Ashmore Reef and the Rowley Shoals off north-western Australia and location of permanent long-term monitoring sites

Source: Gilmour et al. *(2023)*

5.2.1.1 Scott Reef

Scott Reef is an annular reef about 17 km long and 16 km wide comprising two coral reef atolls rising steeply from depths of around 400 to 500 m. These atolls, referred to as South Scott Reef and North Scott Reef, are separated by a deep channel (Figure 5-1). North Scott Reef features an emergent reef flat, outer slope habitats and a shallow lagoon about 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, to shallow to deep lagoonal coral dominated habitats (Gilmour *et al.* 2013). This contrasts with the deeper, more open lagoon of South Scott Reef, described as an extensive, unique mesophotic (30 to 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). Studies at Scott Reef have identified that two short and distinct periods of mass spawning occur during spring and autumn, unlike single mass spawning events at most other reefs around Australia (Gilmour *et al.* 2009a). The dominant coral spawning period at Scott Reef is autumn (March/April), with a secondary, lesser spawning event in spring (October/November). Corals at Scott Reef that are brooders are likely to have multiple gametogenic cycles and spawn several times throughout the year (Gilmour *et al.* 2008; Gilmour *et al.* 2009a).

Over the past 30 years, the coral communities at Scott Reef have been extensively studied and the 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% and 59%. Decreases in coral cover were caused by damaging waves, generated by storms and cyclones, and recurrent heat stress causing coral bleaching. The

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most severe heat stress and mass coral bleaching occurred in 1998 and 2016 (Gilmour *et al.* 2023). In 1998 a mass-bleaching event caused coral cover at Scott Reef to collapse from about 60% to 6%, representing one of the most severe disturbance events recorded for the system (Birt *et al.* 2025). Recovery took over a decade. By 2010, coral cover had reached pre-bleaching levels (45%). Despite moderate coral bleaching and cyclone disturbances, cover increased to 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 after the 1998 mass bleaching (Gilmour *et al.* 2023). Long-term monitoring of reef fish demonstrated the 1998 coral collapse caused strong shifts in fish trophic structure, including marked declines in several species' groups. Although fish assemblages changed substantially after disturbance, they showed resilience and eventual recovery over time. Functional responses were complex, with functional originality at Scott Reef generally increasing as *Acropora* coral cover declined (Birt *et al.* 2025).

Scott Reef supports five species of seagrass: *Thalassia hemprichii, Thalassodendron ciliatum, Cymodocea rotundata, Halophila ovalis* and *H. decipiens* (URS 2006). These species occur widely throughout the Indo-Pacific region. *Thalassia hemprichii* is the most abundant seagrass at Scott Reef (Skewes *et al.* 1999; URS 2006). Skewes *et al.* (1999) reported the dominance of *T. hemprichii*, along with less common *H. ovalis* at South Scott Reef and *T. hemprichii* and *H. ovalis* as co-dominants, with minor *T. ciliatum* at North Scott Reef, all occurring on the reef edge, lagoon edge and shallow lagoon. Seagrasses recorded in less than 15 m depth covered a total of 23 ha out of 10,613 ha (0.22%) at North Scott Reef, and 77 ha out of 14,400 ha (0.54%) at South Scott Reef.

A total of 121 species of algae have been reported from Scott Reef. However, there is likely to be smaller, cryptic species not yet recorded (Western Australian Museum 2009) (SKM 2007). Surveys of macroalgae in 2006 found algal cover to be about 5 to 10% in shallow and intertidal areas, but highly variable, with some areas approaching 100% cover (Western Australian Museum 2009). Higher-energy reef fronts typically supported encrusting coralline *Hydrolithon onkodes* near the reef crest, characteristic of Indo-Pacific reefs. Other reef-front species were associated with dark recesses, including *Peyssonnelia inamoena* and *Corynocystis prostrata*. *Halimeda* species were common across reef flats, outcrops and sandy pools. The turf green algae *Boodlea vanbosseae* and spongy green *Boodlea composita* were commonly present on outcrops, along with red algae *Polysiphonia* spp., *Coelothrix irregularis* and *Gelidiopsis* spp. Dense monospecific stands of algae were observed, most commonly *Ulva* spp. In shallow sandy habitats, as well as *Polysiphonia* spp. at North Scott Reef and *Coelothrix irregularis* at South Scott Reef. An additional survey of deepwater habitats in the Scott Reef lagoons (URS 2007b) identified areas where *Halimeda* occurred in clumps many metres in diameter and was the dominant component of the community. Such densities of *Halimeda* are not considered unique in the region, with similar densities observed at Mermaid, Scott and Seringapatam reefs (Western Australian Museum 2009).

5.2.1.2 Rowley Shoals

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 about 30 to 40 km apart. Each atoll covers an area about 80 to 90 km² and extends almost vertically from seafloor depths of around 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 (about 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). Keesing *et al.* (2025) surveyed coral reef communities at Mermaid Reef in July 2022. This survey also compared data from studies in previous and subsequent years and quantified the benthic coverage of coral, invertebrates, algae and sponge. The survey demonstrated densities of

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invertebrates, including sea cucumbers, coral communities and giant clams, remained consistent with previous surveys, with mean hard coral cover being highest (40-50%) on the exposed western outer reef slope and lowest on the reef flat (<10%). *Acropora* was the most abundant coral genus and was significantly greater on the exposed outer western slope. Turf algae on reef surfaces were an important element of the benthic cover (25 to 60%) but lowest in the shallow lagoon. Macroalgae accounted for >1% of benthic cover on the reef flat, while soft corals comprised about 2 to 3% of cover on the back reef outer slope. Sponges were also a minor part of the benthic cover (mostly <0.5%) (Keesing *et al.* 2025).

Sparsely-distributed seagrass communities are also within the Rowley Shoals. *Thalassia hemprichii* has been recorded at both Mermaid and Clerke reefs and *Thalassodendron ciliatum* and *Halophila ovalis* have been recorded at Mermaid Reef (Berry 1986; Walker and Prince 1987), primarily within the lagoon.

The reefs of Seringapatam, Scott Reef, Ashmore Reef and Cartier Island are recognised as KEFs within the NWMR; see Section 11. Protected area status is in Section 12 and includes the AMPs of Ashmore Reef, Cartier Island, Kimberley and Mermaid Reef, and the State marine parks of the North Kimberley, the Rowley Shoals, Lalang-garram horizontal falls and North Lalang-garram.

5.2.2 North West Shelf

The NWS contains numerous benthic habitats and biological communities, both nearshore and offshore, important in supporting biodiversity across the region.

The nearshore NWS environment contains the Dampier Archipelago, a complex coastal ecosystem. Extensive surveys have demonstrated its high biodiversity values comprising of coral, macroalgae, seagrass and benthic communities across the intertidal and subtidal environments.

Offshore, the NWS comprises various submerged shoal features of high biodiversity value, which support hard coral and macro-algae communities on upper reaches of the shoals and mesophotic filter-feeding benthic communities in deeper waters on and near the shoal features, namely Glomar Shoal and Rankin Bank.

5.2.2.1 Dampier Archipelago

The Dampier Archipelago, on the Pilbara coast of WA, comprises a complex of offshore islands, intertidal and subtidal reefs, embayments and coastal waters on the NWS. The region supports a highly diverse marine environment shaped by strong tidal processes, seasonal monsoonal influences, cyclones, and variability associated with El Niño southern oscillation and the Leeuwin Current system.

Coral communities of the Dampier Archipelago predominantly occur as narrow linear features fringing the shorelines of islands and the Burrup Peninsula, typically between 2 m and 10 m mean lower low water (Blakeway and Radford 2005; Jones 2004). The fringing reefs are not true coral reefs; they establish and grow on existing hard substratum (Jones 2004; WorleyParsons 2009). Both zooxanthellate and azooxanthellate corals are found throughout the Dampier Archipelago, including a total of 229 species from 57 hermatypic coral genera (Woodside 2006; Griffith 2004), representing a large proportion of the 318 hermatypic species from 70 genera known to occur in WA (URS 2004). Studies have indicated the coral assemblage distribution in Mermaid Sound is largely driven by turbidity, wave exposure and tidal currents, with inner Mermaid Sound exhibiting more sediment-tolerant species (Blakeway and Radford 2005; CALM 1994). A baseline assessment of the status of coral communities within Mermaid Sound was completed in May 2019 (MScience 2019). Coral cover measured in this survey was very similar to historic cover levels, ranging from 5.7% to 56.7%.

The ecology, particularly reproductive, of corals in the Dampier Archipelago has been extensively studied (Simpson 1985a; Simpson 1985b; Simpson 1988; Heyward *et al.* 2000; Baird *et al.* 2011). Most of the major coral species are broadcast spawners and have their major peak of reproductive activity in autumn between March and April, about seven to ten nights after the full moon, but there is also some participation in a spring spawning (Gilmour *et al.* 2017). Periods of reproduction through these seasons may be more protracted than on the northern reefs, and species common to the Pilbara display distinct cycles of reproduction (Gilmour *et al.* 2017).

Seagrasses in the Dampier Archipelago are generally sparse, occurring in low abundance on shallow sandy sediments in sheltered areas and interspersed with other benthic communities and habitats (CALM 2005b; Jones 2004; MScience 2014). Surveys and studies (McMahon *et al.* 2017; Woodside 2006) of the region have identified nine species; however, *Halophila* is the predominant genus and is typically restricted to the 6 m (chart datum) depth contour (MScience 2014).

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The most significant areas of seagrass in the Dampier Archipelago are found between Keast and Legendre islands to the north of the Burrup Peninsula, and between West Intercourse Island and Cape Preston. Recorded occurrences of *Halophila* spp. In the Dampier Archipelago fluctuate, depending on factors such as salinity, success of seed set and colonisation, temperature, and grazing by dugongs (Woodside 2006). Furthermore, this fluctuation may indicate the presence of transitory communities, which are annual meadows that develop from the seed bank, grow flower, set seed and die back each year (McMahon *et al.* 2017). The species composition and temporal patterns of abundance and distribution of seagrasses in northwest Australia are highly dynamic and highly variable, often seasonal, dying off over certain periods of the year then re-establishing (Vanderkliff *et al.* 2017).

Macroalgal assemblages in the Pilbara region display an ephemeral growth pattern and may not be present year-round, despite the presence of suitable habitat. Large algal habitats occur around West Intercourse Island and shallow reef flats on the western and eastern margins of Mermaid Sound. In nearshore areas, macroalgae are mostly found on shallow limestone pavements located on the northern and western portions of West Intercourse, West Lewis and Malus islands. More broadly, large expanses of macroalgae are prevalent along the seaward side of West Intercourse Island, extending south-west along the coast to Cape Preston and beyond. The most abundant group of algae in the region is brown algae; particularly, species from the genera *Sargassum, Dictyopteris* and *Padina* are very common (Woodside 2006). The most common species of green algae in the Dampier Archipelago include *Caulerpa* and calcareous *Halimeda* (CALM 2005b; Jones 2004). Various red algae are also found in the Dampier Archipelago, including corallines, calcified red algae and algal turf (Jones 2004).

The Pilbara region has a very high diversity of marine sponges (Fromont *et al.* 2016). Fromont (2003) recorded 275 sponge species within the Dampier Archipelago. About 20% of these species are known to be limited to WA and are likely to be endemic (Fromont 2003). Surveys conducted by Fromont (2004) found the highest diversity of sponges in the Dampier Archipelago occurred in sponge communities that were either low relief or pavement habitats, often with a sediment layer with strong tidal currents. High-diversity sponge communities have been observed at the eastern end of Flying Foam Passage, at the western end of Mermaid Strait, and between Enderby and West Lewis islands (Fromont 2004; Jones 2004). Generally, the high habitat complexity of the Dampier Archipelago corresponds with high sponge species richness, contributing to the high biodiversity value of the nearshore environment of the Pilbara region (Fromont 2016).

5.2.2.2 Glomar Shoal

Glomar Shoal is a large (215 km²) and complex bathymetrical feature on the outer continental shelf off the Pilbara coast. 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) (Figure 5-1).

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 (as in, 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; see Table 11-1. Protected area status is described in Section 12 and includes the Commonwealth Marine Park of Montebello, the State marine parks of Montebello Islands and Barrow Island, and the Barrow Island marine management area.

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5.2.2.3 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 5-1).

Surveys of Rankin Bank were undertaken by 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 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).

The 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).

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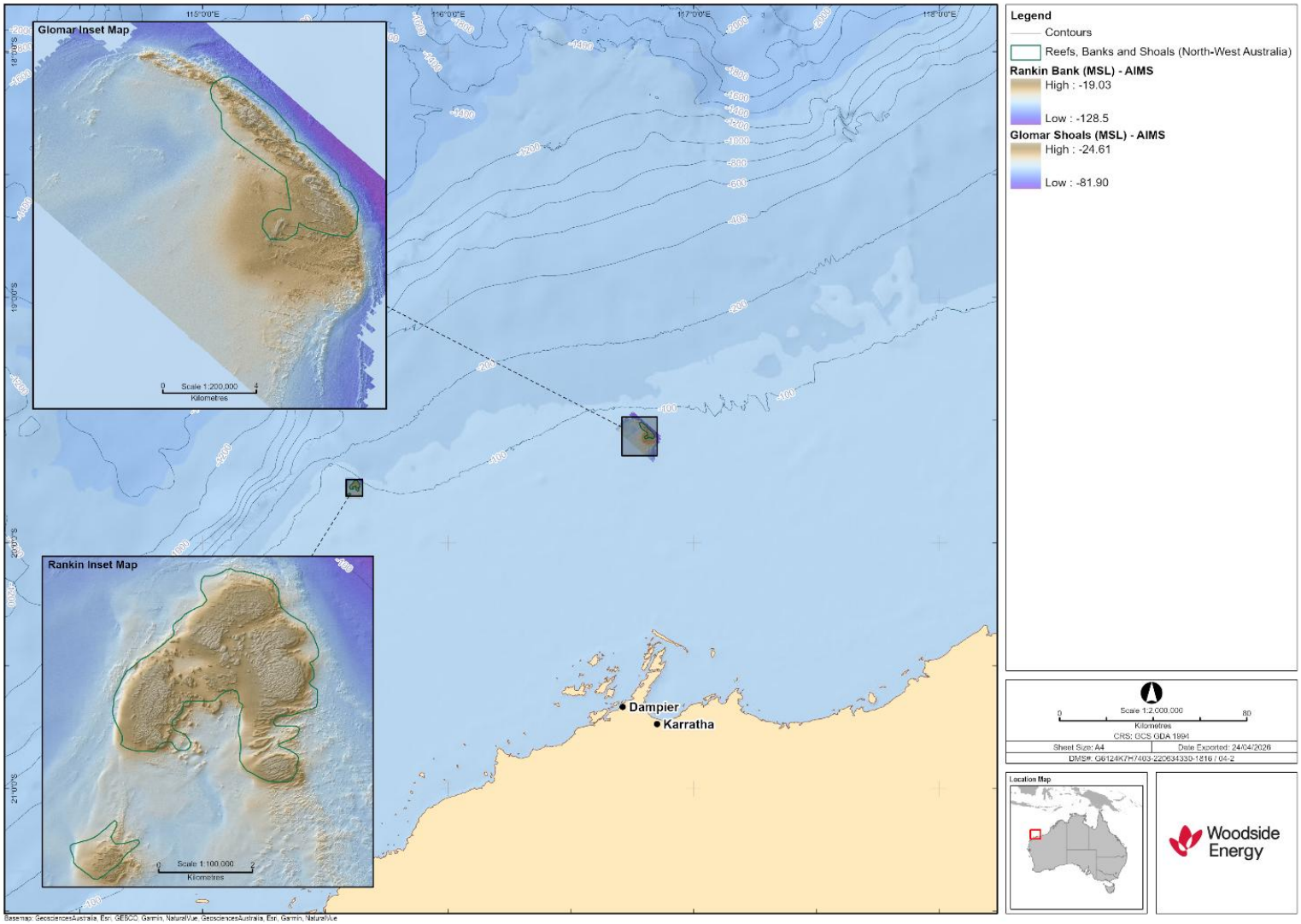


Figure 5-2: Habitat maps of Rankin Bank and Glomar Shoal

Source: AIMS (2014)

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5.2.3 North West Cape

The North West Cape contains highly diverse benthic habitats and biological communities, both nearshore and offshore, important in supporting biodiversity across the North West Cape region. The benthic habitats of Exmouth Gulf, Ningaloo Reef and Muiron Islands are ecologically significant, supporting high biodiversity and important habitats for a range of marine species.

The Exmouth Gulf supports diverse benthic habitats, including seagrass meadows, cyanobacterial mats, coral communities and filter-feeding assemblages, which contribute to primary productivity, nutrient cycling and provide habitat for species of ecological and conservation significance. Ningaloo Reef and the Muiron Islands are characterised by extensive coral and algal reef communities that underpin the region's internationally recognised biodiversity values, supporting diverse marine life and important ecological connectivity across the broader North West Cape region. The next subsections describe benthic communities and habitats for the North West Cape.

5.2.3.1 Exmouth Gulf

The Exmouth Gulf supports highly diverse subtidal and intertidal habitats, including cyanobacterial mats, seagrass meadows, mangroves, coral communities and salt flats. Spanning land and sea, within and beyond Exmouth Gulf, the habitats support nutrient flows and species connectivity, while groundwater and seawater interact to regulate the unique karst system and subterranean fauna of Cape Range (Western Australian Marine Science Institution (WAMSI) 2025).

Subtidal benthic habitats within the Exmouth Gulf are dominated by a combination of unvegetated sediments (about 60.5% of benthos), filter-feeding communities (about 24%), seagrass meadows (about 8.1%) and coral reef habitats (about 1.9%) (WAMSI 2025). Cyanobacterial mats are a particularly important benthic component. These mats contribute to primary production and nitrogen fixation within the coastal system, with estimates indicating they contribute up to about 15% of total primary production in the Gulf, supporting higher trophic levels, including fish and elasmobranchs (WAMSI 2025).

Seagrass meadows occur in shallow subtidal waters, particularly along the eastern margins of the Gulf, where they provide essential nursery and foraging habitat for commercially important prawn species, dugongs and marine turtles, while also stabilising sediments and contributing to carbon cycling. Seagrass cover and extent vary seasonally, with the highest densities recorded in summer and the lowest spatial extent recorded in winter. A study conducted in the eastern Gulf between 2013 and 2015 found that seagrass area coverage more than doubled in summer compared to the coverage recorded in winter (WAMSI 2025). This seasonal shift can be attributed to lower turbidity in the Gulf in summer allowing increased sunlight into the water column, which facilitates seagrass expansion before declining in winter due to increased turbidity and cooler water (Evans *et al.* 2025).

Coral reefs of the Gulf occupy a relatively small proportion but support a disproportionately high biodiversity, and are particularly important around the Muiron Islands, Bundegi and offshore islands (WAMSI 2025). Many reefs within Exmouth Gulf are considered marginal or turbid systems, yet they demonstrate complex responses to environmental stressors and contribute to regional connectivity with Ningaloo Reef and the wider Pilbara (WAMSI 2025).

Habitats of the Exmouth Gulf support a high diversity of fauna, including fauna of ecological and conservation importance, such as sawfish, sea snakes, dugongs, marine turtles, humpback whales and migratory birds (WAMSI 2025). Further, the benthic environment of the Gulf supports a diverse and ecologically distinct assemblage of sessile benthic marine invertebrates, particularly within shallow waters (<30 m depth) (Richards *et al.* 2025). A comprehensive review of museum specimens, verified photographic records and biodiversity databases identified at least 295 species of sessile benthic invertebrates from Exmouth Gulf, representing a substantial component of the North West Cape regional biodiversity. Notably, 165 of these species are restricted to Exmouth Gulf and have not been recorded within the neighbouring habitats of Ningaloo Reef or the Muiron Islands. A distinctive community of filter-feeding and habitat-forming invertebrates, including more than 125 sponge species, 27 tunicate species and 18 anemone species, have also been identified in the Gulf and found to be absent from neighbouring areas. All three sea pen species recorded within the broader study area occur exclusively within Exmouth Gulf (Richards *et al.* 2025). The distinctive communities highlight the Gulf as a centre of unique benthic diversity, shaped by turbid, low light and dynamic environmental conditions (Richards *et al.* 2025).

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5.2.3.2 Ningaloo Reef and Muiron Islands

Ningaloo Reef is one of Australia's iconic marine areas. The significance of this ecosystem is recognised through the reef's 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. It is one of the longest (about 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 close, resulting in a huge array of internationally significant marine life coexisting. More than 200 hard coral, 500 fish, 650 mollusc, 600 crustacean, 1,000 marine algae, 155 sponge and 25 echinoderm species have been recorded from the shelf, slope and deepwater habitats[2]. Refer to the CSIRO Ningaloo Outlook program for more information and publications relating to the shallow and deepwater reef systems, and megafauna species (marine turtles and whale sharks)[3].

The extensive reef system has been classified by topography and benthic cover using airborne hyperspectral surveys; much of the area was allocated as shallow, flat lagoons intersected by narrow, deeper channels that facilitate water circulation. Some of the geomorphic/benthic classes of coral-algae mosaics in different topographic settings are presented below (Kobryn *et al.* 2022):

- 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.

Ningaloo Reef, and the Muiron Islands, at the northern tip of the Ningaloo Reef, contain fringing reef habitat that supports benthic communities dominated by algae and consolidated reef in the shallow reef environment. Surveys by AIMS in 2024 documented hard coral cover averaged about 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 (Section 5.2.1), 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, which 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[4]. Also of note are recurrent deoxygenation events at Bills Bay (Coral Bay) after coral spawning events. Last occurring in March 2022, deoxygenation was triggered by a combination of weather and oceanographic conditions that led to prolonged trapping of coral spawn in Bills Bay, which 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).

Commonwealth waters adjacent to Ningaloo Reef are recognised as a KEF within the NWMR (Table 11-1).

5.2.4 Shark Bay

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. The region is renowned for its terrestrial and marine biodiversity, including seagrass cover.

Seagrass in Shark Bay extends over 4,000 km² of the bay and the 1,030 km² Wooramel Seagrass Bank, which is the largest structure of its type in the world. Benthic communities in relatively sheltered areas of outer Shark Bay are characterised by seagrass and turf algae, whereas in more exposed locations, benthos is dominated by macroalgal and turf algal communities (AIMS 2014). Towards the outer Bay area, seagrass is less abundant. Baseline surveys by AIMS in 2014, targeting the outer Shark Bay area and the habitats and

[2] https://library.dbca.wa.gov.au/FullTextFiles/PAM04552.pdf
[3] https://research.csiro.au/ningaloo/outlook/research-outputs/publications/
[4] https://www.csiro.au/en/research/environmental-impacts/climate-change/state-of-the-climate

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benthic communities surrounding the barrier islands of Dirk Hartog, Bernier and Dorre, found sand was a dominant feature of the benthos (>60%), particularly in areas inside the Bay and in deep water.

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 assessed (AIMS 2014). Observations of patchy but high coral cover in shallow parts of some towed video transects suggest 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).

Marine heatwaves and other extreme climatic events are causing widespread mortality of habitat-forming species and driving significant ecological change globally, including the loss of seagrass. As marine heatwaves become more frequent and intense, the long-term resilience of these critical habitats becomes increasingly uncertain. In Shark Bay, fragmentation after a 2010–11 heatwave was found to coincide with extensive seagrass loss, indicating the loss was strongly influenced by heat-stress exposure and water depth (Taylor *et al.* 2025).

After the 2011 marine heatwave, a study assessed the changes in seagrass meadows within Monkey Mia and Shark Bay. The study used long-term *in situ* monitoring with satellite-derived habitat classification and revealed a significant loss of seagrass habitat and density (about 1,382 ha) had occurred six years after the 2011 heatwave event. While some was recorded by 2020, the dense seagrass coverage remained lower than levels recorded in 2010. Fragmentation of seagrass had increased dramatically between 2010 and 2013, with seagrass loss most evident on the edges of continuous meadows and near deep channels. Losses were mostly comprised of seagrass *Amphibolis antarctica*. *Posidonia australis* coverage remained stable initially, before a decline was observed in 2016. Despite this, recovery of overall seagrass coverage was observed in 2020, with a higher proportion of sparse meadows indicating recovery (Strydom *et al.* 2026).

Further analysis of marine heatwaves in Shark Bay has highlighted the strong influence bathymetry and geomorphology have on heat stress patterns. Hu *et al.* (2025) observed that the shallow in-bay zones of Shark Bay experience frequent short heatwave events and deeper offshore areas are subject to less frequent, intense heatwaves that are driven by El Niño southern oscillation-modulated warm-water advection. Spatial variability in thermal regimes likely intensified the 2010–11 marine heatwave impacts, as low thermal inertia in shallow seagrass meadows and restricted hydrodynamic exchange amplified thermal stress, contributing to heightened mortality and canopy fragmentation (Hu *et al.* 2025).

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6. FISHES, SHARKS AND RAYS

6.1 Regional context

WA waters provide important habitat for listed fishes, sharks and rays, including areas that support key life stages such as breeding and foraging, and migration routes for fish species. Pelagic and demersal fishes occupy a range of habitats throughout each region, 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.

Table 6-1 describes the fish assemblages of each marine bioregion.

Table 6-1: Description of the fish assemblages of the marine bioregions

Marine bioregion	Overview
North-west	The NWMR supports a wide diversity of global fish species. 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 1,431 fish species from the three bioregions encompassing the continental slope, while also acknowledging some information gaps. Of the abut 500 shark species found worldwide, 94 are found in the region (DEWHA 2008a). About 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 PMST report (Appendix A) identified a total of 17 EPBC Act listed threatened or migratory shark and ray species within the NWMR (Table 6-2). An additional 53 EPBC Act listed marine fish species, including a variety of pipefish, sea dragons and ghost pipefish (Syngnathidae and Solenostomidae), that do not have a threatened or migratory status were recorded within the NWMR. Appendix A provides a full list of the species identified in the PMST report.
South-west	The fish fauna of the SWMR are highly diverse, with hundreds of species occupying a large variety of habitats, including high biodiversity of tropical and temperate fish species found at Houtman Abrolhos due to the Leeuwin Current, nutrient upwelling events attracting large aggregations of small pelagic fish and predatory fish such as tuna, billfish and sharks, and migratory fish such as herring, garfish, tailor and Australian salmon visiting the west-coast inshore lagoons seasonally. The demersal slope and associated fish communities of the Central Western Province are important habitats for demersal communities with high diversity and endemism. Depths below 400 m are dominated by small benthic species such as grenadiers, dogfish and cucumber fish. Only three species of bony fishes known to occur in the region are listed under the EPBC Act as threatened or marine species, and six listed species of shark (DSEWPaC 2012b). The PMST report (Appendix A) identified a total of nine EPBC Act listed threatened or migratory fish and shark species within the SWMR. An additional 36 EPBC Act listed marine fish species. including a variety of pipefish, sea dragons and ghost pipefish (Syngnathidae and Solenostomidae), that do not have a threatened or migratory status were recorded within the SWMR. Appendix A provides a full list of the species identified in the PMST report.
North	The NMR is considered an important area for sawfish and river shark species, with three species of sawfishes and two species of river sharks listed under the EPBC Act known to occur in the region. Relatively little is known about the distribution and abundance of sawfish and river sharks in the NMR. However, the NMR is crucial for supporting nationally and globally significant populations of sawfish and river shark species found nowhere else in the world. A vast array of seahorse and pipefish species are found in the area, but there is little knowledge about the distribution, relative abundance and habitats of these species in the region. Higher-order fish predators of coral and rock reef habitats include snapper, emperor and grouper. The Gulf of Carpentaria basin supports assemblages of pelagic species, including planktivorous and schooling fish, with top predators such as shark, snapper, tuna and mackerel (DSEWPaC 2012c). The PMST report (Appendix A) identified a total of 15 EPBC Act listed threatened or migratory shark and ray species within the NMR. An additional 45 EPBC Act listed marine fish species, including a variety of pipefish, sea dragons and ghost pipefish (Syngnathidae and Solenostomidae), that do not have a threatened or migratory status were recorded within the NMR. Appendix A provides a full list of the species identified in the PMST report.

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6.2 Fish, shark and rays in the 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 1,431 species from the three bioregions encompassing the continental slope, while also acknowledging some information gaps.

The NWMR is known for its demersal slope fish assemblages; the continental slope of the Timor Province and the Northwest Transition support 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 2008a), as described in Section 11. The Browse, NWS/Scarborough and the North West Cape activity areas overlap 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).

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 fish communities along the ancient coastline at 125 m depth contour 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 bentho-pelagic fishes, including tuna, billfish, bramids, lutjanids, serranids and some sharks (DEWHA 2007a). These species feed on salps and jellyfish, and more often on secondary consumers such as squid and bait fish. Water depth provides an indication of the level of interaction between pelagic and benthic communities within the NWMR; in waters deeper than 1,000 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 2008a).

Table 6-2 outlines the threatened and migratory fish species that may occur, are likely to occur or are known to occur within the NWMR, with their conservation status and relevant recovery plans and conservation advice, while the next subsections focus on the fish species (including sharks and rays) listed as threatened or migratory that are known to occur within the NWMR. Section 13.2.1 provides a detailed account of commercial and recreational fisheries that operate in the region.

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Table 6-2: Threatened and migratory fish, shark and ray species identified by the EPBC Act PMST that may, likely or are known to occur within the NWMR

Species name	Common name	EPBC Act (Commonwealth) (as per PMST report Appendix A)			*Biodiversity Conservation Act 2016* (BC Act) (WA)[5]	IUCN Red List (non-statutory)[6]	EPBC Act Part 13 statutory instrument
		Threatened status	Migratory status	Listed	Conservation status	Global status	
Anoxypristis cuspidata	Narrow sawfish	N/A	Migratory	Marine	Migratory	Critically Endangered	N/A
Carcharias taurus	Grey nurse shark (west-coast population)	Vulnerable	N/A	Marine	Vulnerable	Near Threatened	Recovery Plan for the Grey Nurse Shark (*Carcharias taurus*) (DoE 2014a)
Carcharodon carcharias	White shark	Vulnerable	Migratory	Marine	Vulnerable	Vulnerable	Recovery Plan for the White Shark (*Carcharodon carcharias*) (DSEWPaC 2013b)
Carcharhinus longimanus	Oceanic whitetip shark	N/A	Migratory	Marine	Migratory	Critically Endangered	N/A
Centrophorus zeehaani (previously known as *Centrophorus uyato)*	Little gulper shark, southern dogfish	Conservation Dependant	N/A	N/A	N/A	Endangered	Commonwealth Listing Advice on *Centrophorus zeehaani* (southern dogfish) (Threatened Species Scientific Committee 2013a)
Isurus oxyrinchus	Shortfin mako	N/A	Migratory	Marine	Migratory	Endangered	N/A
Isurus paucus	Longfin mako	N/A	Migratory	Marine	Migratory	Endangered	N/A
Lamna nasus	Porbeagle shark, mackerel shark	N/A	Migratory	Marine	Migratory	Vulnerable	N/A

[5] Threatened and Priority Fauna List – July 2025 - https://www.dbca.wa.gov.au/management/threatened-species-and-communities (accessed on 21/05/2026).
[6] International Union for Conservation of Nature (IUCN), 2026. The IUCN Red List of Threatened Species. Version 2025-2. https://www.iucnredlist.org (accessed on 21/05/2026).

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Species name	Common name	EPBC Act (Commonwealth) (as per PMST report Appendix A)			*Biodiversity Conservation Act 2016* (BC Act) (WA)[5]	IUCN Red List (non-statutory)[6]	EPBC Act Part 13 statutory instrument
		Threatened status	Migratory status	Listed	Conservation status	Global status	
Glyphis garricki	Northern river shark	Endangered	N/A	Marine	Priority	Vulnerable	Sawfish and River Sharks Multispecies Recovery Plan (Commonwealth of Australia 2015b) Conservation Advice for *Glyphis garricki* (northern river shark) (DoE 2014b)
Sphyrna lewini	Scalloped hammerhead	Conservation Dependant	N/A	N/A	N/A	Critically Endangered	Listing Advice for *Sphyrna lewini* (scalloped hammerhead) (Threatened Species Scientific Committee 2024)
Glyphis glyphis	Speartooth shark	Critically Endangered	N/A	N/A	N/A	Vulnerable	Approved Conservation Advice for *Glyphis glyphis* (speartooth shark) (DoE 2014c)
Manta alfredi	Reef manta ray	N/A	Migratory	Marine	Migratory	Vulnerable	N/A
Manta birostris	Giant manta ray	N/A	Migratory	Marine	Migratory	Endangered	N/A
Pristis clavata	Dwarf sawfish	Vulnerable	Migratory	Marine	Priority	Critically Endangered	Sawfish and River Sharks Multispecies Recovery Plan (Commonwealth of Australia 2015b) Conservation Advice for *Pristis clavata* (dwarf sawfish) (DEWHA 2009b)
Pristis zijsron	Green sawfish	Vulnerable	Migratory	Marine	Vulnerable	Critically Endangered	Sawfish and River Sharks Multispecies Recovery Plan (Commonwealth of Australia 2015b)
Pristis pristis	Largetooth (freshwater) sawfish	Endangered	Migratory	Marine	Priority	Critically Endangered	Sawfish and River Sharks Multispecies Recovery Plan (Commonwealth of Australia 2015b) Conservation Advice for *Pristis pristis* (largetooth sawfish) (DCCEEW 2025a)
Rhincodon typus	Whale shark	Vulnerable	Migratory	Marine	Migratory	Endangered	Conservation Advice *Rhincodon typus* whale shark (Threatened Species Scientific Committee 2015d)

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6.2.1 Fish

The PMST report identified 53 Syngnathidae and Solenostomidae EPBC Act listed marine species within the NWMR. Table 6-3 describes the Syngnathidae and Solenostomidae families.

Table 6-3: Information about the EPBC Act listed threatened fish species that may, likely or are known to occur within the NWMR

Family	Preferred habitat and diet	Habitat location
Syngnathidae and Solenostomidae	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). 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 listed marine 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 PMST for 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.

6.2.2 Sharks and sawfishes

Table 6-4 details the shark, river shark and sawfish species that may, likely or are known to occur within the NWMR.

BIAs are identified within the NWMR for the whale shark, freshwater sawfish, green sawfish and dwarf sawfish. See Table 6-6.

Table 6-4: Information about the EPBC Act listed threatened shark and sawfish species that may, likely or are known to occur within the NWMR

Species	Preferred habitat and diet	Habitat location
Dwarf sawfish	Preferred habitat[1]: 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).	Northern Australia is considered a stronghold for sawfish (*Pristis* sp.). With observations generally higher in numbers in the western coastal regions of the NT compared to the south-western Gulf of Carpentaria region (Udyawer *et al.* 2025). Literature indicates the most southern range for the dwarf sawfish is Port Hedland (Bateman *et al.* 2024). See Table 6-6 for the BIA summary for the dwarf sawfish.
Green sawfish	Preferred habitat[1]: Inshore coastal environments including estuaries, river mouths, embayments, and along sandy and muddy beaches, as well as offshore marine habitat (Stevens *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 (Poganoski *et al.* 2002), molluscs and small crustaceans (Cliff and Wilson 1994).	Northern Australia is considered a stronghold for sawfish (*Pristis* sp.). With observations generally higher in numbers in the western coastal regions of the NT compared to the south-western Gulf of Carpentaria region (Udyawer *et al.* 2025). An aggregation of green sawfish (*Pristis zijsron*) has been identified in the Garig Gunak Barlu National Park (Cobourg Peninsula, NMR). Davies *et al. (*2022) suggest 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). See Table 6-6 for the BIA summary for the green sawfish.

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Species	Preferred habitat and diet	Habitat location
Grey nurse shark (west-coast population)	Preferred habitat: Most found in temperate waters on, or near, the bottom of the continental shelf (McAuley 2004; Kyne *et al*. 2021), around coral rocky reefs that span from inshore surf zones to the outer continental reef. They are generally found in depths between 10 and 40 m, with reported maximum depths of 230 m (Krause and Stow 2025). Diet: A variety of teleost and elasmobranch fishes and some cephalopods (Gelsleichter *et al*. 1999; Smale 2005).	Movement patterns of the western subpopulation are unclear (McAuley 2004) and key aggregation sites have not been formally identified within the NWMR (Chidlow *et al*. 2006). The known distribution for the western population extends from the SA border up to Exmouth (Krause and Stow 2025). 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). Grey nurse sharks have also been recorded around the tropical reefs of Browse Island, and anecdotal sightings from the Arafura Sea. In addition, one individual has been recorded in trawling nets off the north-west coast of the Tiwi Islands, NT (Krause and Stow 2025).
Largetooth (freshwater) sawfish	Preferred habitat: Sandy or muddy bottoms of shallow coastal waters, estuaries, river mouths and freshwater rivers, and isolated water holes. Diet: Shoaling fishes, such as mullet, as well as molluscs and small crustaceans (Cliff and Wilson 1994).	Northern Australia is considered a stronghold for the sawfish (*Pristis sp.*), with observations generally higher in numbers in the western coastal regions of the NT compared to the south-western Gulf of Carpentaria region (Udyawer *et al*. 2025). 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). See Table 6-6 for the BIA summary for the largetooth (freshwater) sawfish.
Little gulper shark	Preferred habitat: the little gulper shark are found in waters on the upper continental slopes and undertake diel migrations across their depth ranges from relatively deep depths during the day to shallower feeding depths at night (Threatened Species Scientific Committee 2013a). Diet: Primarily fish and invertebrates, with lanternfish and squid being the primary prey (Threatened Species Scientific Committee 2013a).	The little gulper shark may occur within the NWMR, however the species is primarily associated with continental slope habitats of southern Australia, including New South Wales, Tasmania, South Australia and south-west Western Australia, typically occurring at depths greater than 400 m (White et al 2008)
Longfin mako	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 to 1,752 m (Kyne *et al.* 2021). Diet: Primarily teleost fishes and cephalopods (mainly squid) (Last and Stevens 2009).	Records for longfin mako sharks are sporadic and their complete geographic range is not well known (Reardon *et al.* 2006). Given the migratory nature of the species, most likely has a broad distribution within the NWMR. No BIAs identified for the NWMR.

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Species	Preferred habitat and diet	Habitat location
Mackerel/ porbeagle shark	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 1,300 m (Campana *et al.* 2010; Saunders *et al.* 2011). Depth range records are 0 to 370 m (Kyne *et al.* 2021). Diet: Primarily teleost fish, elasmobranchs and cephalopods (primarily squid) (Joyce *et al.* 2002; Last and Stevens 2009).	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, 2020).
Narrow sawfish	Preferred habitat[1]: Shallow coastal, estuarine and riverine habitats, but 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).	Northern Australia is considered a stronghold for sawfish (*Pristis* sp.), with observations generally higher in numbers in the western coastal regions of the NT compared to the south-western Gulf of Carpentaria region (Udyawer *et al.* 2025). This species has been found in shallow coastal waters of the Pilbara and Kimberly coasts (Last and Stevens 2009).
Northern river shark	Preferred habitat[1]: Rivers, tidal sections of large tropical estuarine systems and macrotidal embayments, as well as inshore and offshore marine habitats (Pillans *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: A variety of fish and crustaceans (Stevens *et al.* 2005).	Northern Australia is considered a stronghold for river sharks (*Glyphis sp.),* with observations generally higher in numbers in the western coastal regions of the NT compared to the south-western Gulf of Carpentaria region (Udyawer *et al.* 2025). The northern river shark has a relatively restricted northern Australian range (although with an extent of occurrence >20,000 km²) (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 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).
Oceanic whitetip shark	Preferred habitat: The oceanic whitetip shark is globally distributed in warm-temperate and tropical oceans (Andrzejaczek *et al.* 2018). The species may occur in tropical and subtropical 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 1,000 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. Diet: Opportunistic feeders that 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.	Given its migratory nature, this species most likely has a broad distribution within the NWMR. No BIAs identified for NWMR.

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Species	Preferred habitat and diet	Habitat location
Scalloped hammerhead	Preferred habitat: In northern Australia, juveniles inhabit inshore environments while adults typically occur in deeper waters near the edge of the continental shelf. Pregnant females will move to shallow nursery areas to give birth. The scalloped hammerhead is found in waters ranging from the surface to depths of at least 275 m. The species has also been recorded at a depth of 1,042 m (Threatened Species Scientific Committee 2024).	In WA, the scalloped hammerhead is recorded along the northern coastline to about 34°S (Geographe Bay). It is suggested a high proportion of adult females may migrate from Australia to Indonesia and Papua New Guinea waters, and return to give birth in coastal nursery areas in northern Australia (Threatened Species Scientific Committee 2024).
Shortfin mako	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 suggests shortfin makos have multiple movement phases, displaying both high connectivity between Australian populations and periods of residency (Corrigan *et al.* 2018). Diet: Feeds on a variety of prey, such as teleost fishes, other sharks, marine mammals and marine turtles (Campana *et al.* 2005).	Given its migratory nature, this species most likely has a broad distribution within the NWMR. No BIAs identified for the NWMR.
Speartooth shark	Speartooth sharks are elasmobranchs that can inhabit and move between freshwater and marine environments (DoE 2014c). Juveniles and sub-adults have been observed to inhabit large tropical river systems, while adults are assumed to live outside of rivers in coastal marine areas, due to their physiological and life history similarities with bull sharks (DoE 2014c).	The speartooth shark is a medium sized shark found in tidal rivers and estuaries within the NT, northern WA and Queensland (DoE 2014c). Speartooth sharks have been recorded in tidal rivers and estuaries (Pillans *et al.* 2009). Data on a small number of speartooth sharks indicate this species has tidally influenced movement patterns (Pillans *et al.* 2009). Within Australia, speartooth sharks are known to occur in four distinct locations: Cambridge Gulf in WA; Van Diemen Gulf drainage in the NT, including the Adelaide River, South, East and West Alligator Rivers and Murganella Creek; Port Musgrave in Queensland, including the Wenlock and Ducie Rivers; and the Princess Charlotte Bay area of Eastern Cape York (Field *et al.* 2008, Pillans *et al.* 2009).

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Species	Preferred habitat and diet	Habitat location
Whale shark	Preferred habitat: Whale sharks 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 various planktonic species, including krill, jellyfish, and crab larvae (Last and Stevens 2009). At Ningaloo Reef, whale shark habitat use is strongly driven by fine-scale prey availability, with whale sharks concentrating in reef-edge areas where complex bathymetry and local oceanographic processes aggregate zooplankton. While elevated prey density drives horizontal space use, whale sharks' vertical movements are not tightly coupled to prey depth distributions, indicating that prey availability influences foraging locations but does not directly govern diving behaviour (D'Antonio *et al.* 2024).	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). A study by D'Antonio *et al.* (2025) investigated the influence of geomorphological features and oil and gas platforms on the broad-scale movement patterns and habitat connectivity of whale sharks across the eastern Indian Ocean and the north-west of Australia. Satellite telemetry from 78 whale sharks tagged between 2005 and 2019 during their seasonal aggregations in coastal waters at Ningaloo Reef and at Shark Bay during the austral autumn and winter were used to identify movement patterns and habitat connectivity. Geomorphological features such as pinnacles, canyons and seamounts promoted habitat connectivity and strongly influenced the habitat use of whale sharks across regional and local spatial scales. Oil and gas platforms were observed to have a similar effect on habitat use as natural feature types and enhanced habitat connectivity. The platforms most visited by whale sharks were situated near the edge of the continental shelf and near natural geomorphological features that likely enhance productivity, and were likely used as migratory stepping stones (D'Antonio *et al.* 2025). Satellite tracking at Ningaloo Reef showed whale shark distribution ranged widely across the eastern Indian Ocean, spending more than 90% of their time in epipelagic waters (≤200 m) while also performing occasional deep dives to bathypelagic depths (about 1,900 m). Geographical and vertical habitat use differed between sexes, with females more likely to occupy offshore areas, use deeper waters, and prefer cooler sea-surface temperatures than males. In contrast, males displayed more consistent space and depth use with warmer (<28 °C), coastal shelf waters (Bignell *et al.* 2025). Acoustically tagged whale sharks have been detected on the NWS in June, July and October to January (Thomson *et al.* 2021). Satellite tagging and sightings of whale sharks off the WA coast indicate that while whale sharks aggregate in higher numbers at Ningaloo Reef seasonally, they may be present year-round (Norman *et al.* 2017). See Table 6-6 for the BIA summary for the whale shark.

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Species	Preferred habitat and diet	Habitat location
White shark	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 1,000 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 its migratory nature, this species most likely has a broad distribution within the NWMR. No BIAs identified for the NWMR.

1. *Preferred habitat as described within the Sawfish and River Sharks Multispecies Recovery Plan (Commonwealth of Australia 2015b).*

6.2.3 Rays

Rays are commonly found in the NWMR. Two listed and migratory species are known to occur within this region: 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 6-5: Information about migratory ray species within the NWMR

Species	Preferred habitat and diet	Habitat location
Reef manta ray	Preferred habitat: The reef manta ray is commonly sighted within productive nearshore environments, such as island groups, atolls or continental coastlines. However, the species has also been recorded at offshore coral reefs, rocky reefs and seamounts (Marshall *et al.* 2009). Recorded depth range of 0 to 432 m (Kyne *et al.* 2021). Diet: Feeds 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 the NWMR.
Giant manta ray	Preferred habitat: The species primarily inhabits nearshore 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 1,000 m (Kyne *et al.* 2021). Diet: Feeds 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 the NWMR.

6.3 Fish, shark and sawfish biologically important areas in the NWMR

A review of the Australian Marine Spatial Information System (Geoscience Australia, 2026) identified 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. Table 6-6 describes these.

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Table 6-6: Fish, whale shark and sawfish BIAs within the NWMR (Source: Geoscience Australia, 2026)

Species	Woodside activity area			BIAs			
	Browse	***NWS/ Scarborough***	***North West Cape***	***Reproduction – pupping***	***Reproduction – nursing***	***Juvenile***	***Foraging***
Whale shark	✓	✓	✓	-	-	-	Foraging (high density) in Ningaloo Marine Park and adjacent Commonwealth waters (Mar to Jul) Foraging northward from Ningaloo along the 200 m isobath (Jul to Nov)
Green sawfish	✓	✓	-	Pupping in Cape Keraudren (in summer in a narrow area adjacent to the shoreline) Pupping in Willie Creek Pupping in Roebuck Bay Pupping in Cape Leveque Pupping in waters adjacent to Eighty Mile Beach Pupping (likely) in Camden Sound	Nursing in Cape Keraudren Nursing in waters adjacent to Eighty Mile Beach	-	Foraging in Cape Keraudren Foraging in Roebuck Bay Foraging in Cape Leveque Foraging in Camden Sound
Largetooth (freshwater) sawfish	✓	✓	-	Pupping in the mouth of the Fitzroy River (Jan to May) Pupping in Roebuck Bay (Jan to May) Pupping likely in waters adjacent to Eighty Mile Beach (Jan to May)	Nursing (likely) in King Sound	Waters adjacent to Eighty Mile Beach Roebuck Bay	Foraging in the mouth of the Fitzroy River (Jan to May) Foraging in King Sound and Roebuck Bay (Jan to May) Foraging in waters adjacent to Eighty Mile Beach
Dwarf sawfish	✓	✓	-	Pupping in King Sound Pupping in waters adjacent to Eighty Mile Beach	Nursing in King Sound Nursing waters adjacent to Eighty Mile Beach	King Sound	Foraging in King Sound Foraging in Camden Sound Foraging in waters adjacent to Eighty Mile Beach

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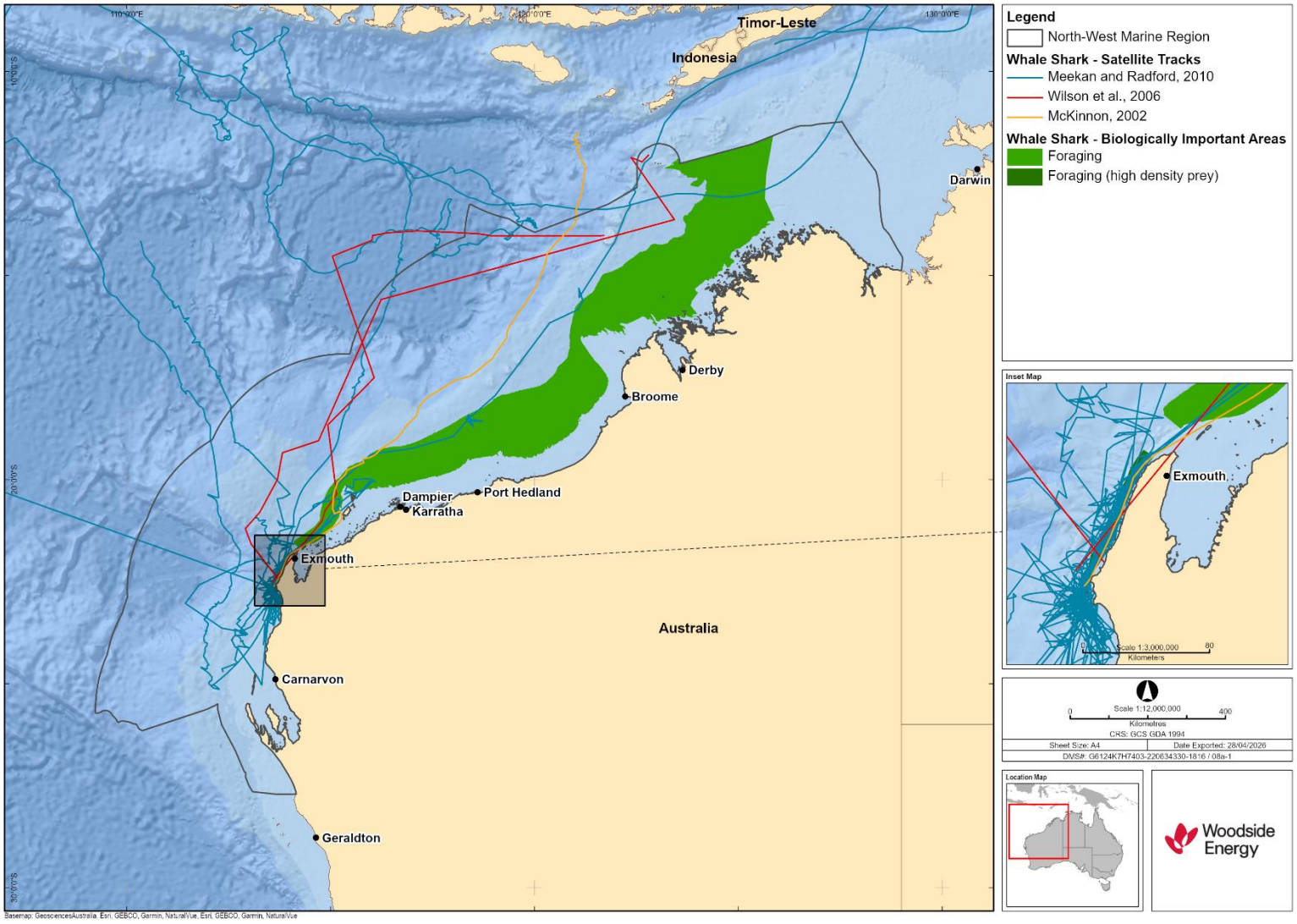


Figure 6-1: Whale shark biologically important areas (BIAs) for the NWMR and tagged whale shark satellite tracks

Source for BIAs: DCCEEW (2025b)

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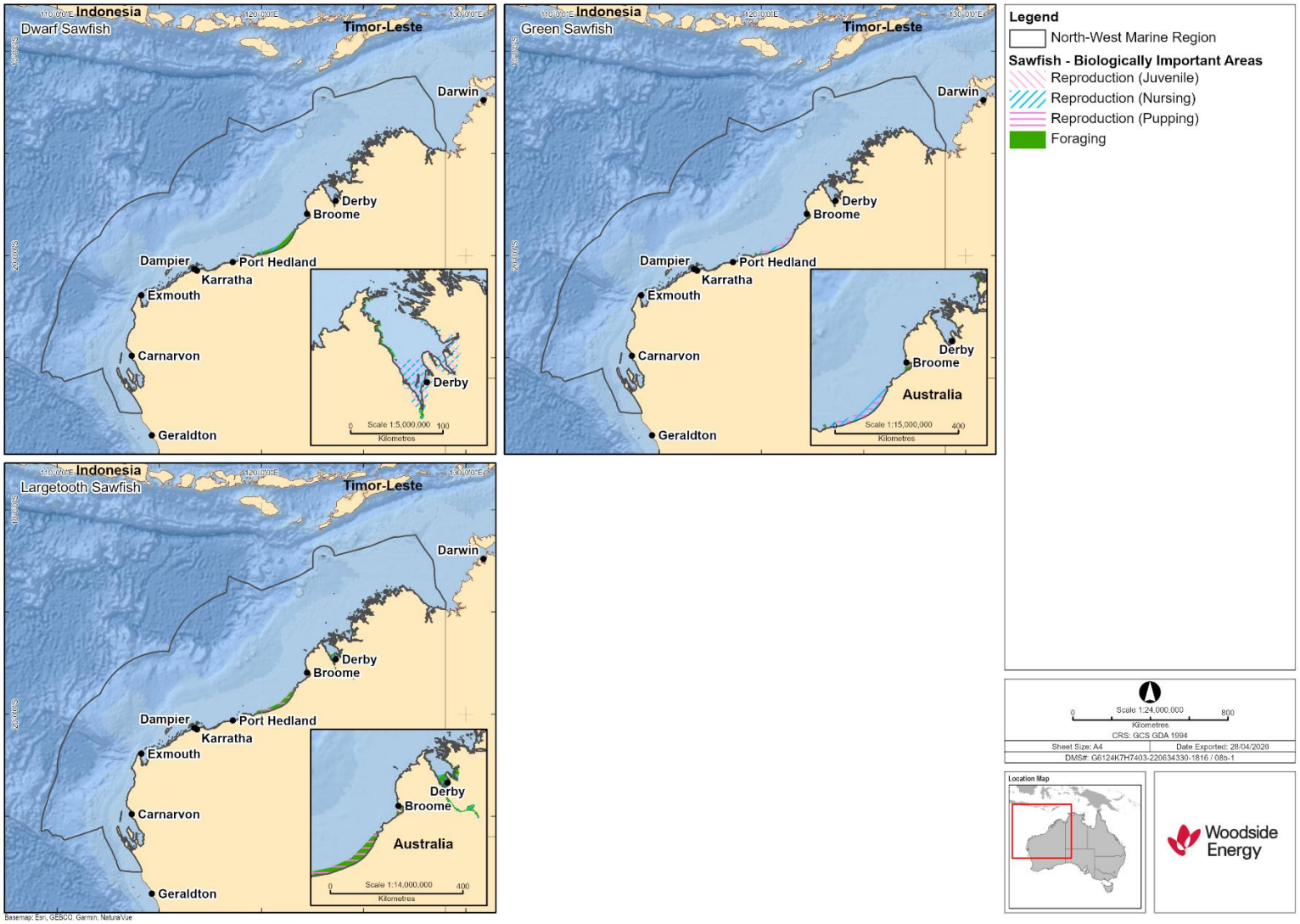


Figure 6-2: Sawfish BIAs for the NWMR

Source: DCCEEW (2025b)

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7. MARINE REPTILES

7.1 Regional context

The NWMR and NMR contain 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, crocodile, and water monitor (NWMR only) populations. Habitats within the SWMR also support marine reptiles; however, these are primarily associated with foraging marine turtle species.

Six of the seven marine turtle species occurring globally are in Australian waters, of which all six – the green, hawksbill, loggerhead, flatback, leatherback and olive ridley turtle – occur in the NWMR and NMR. Four species of marine turtles – the green, loggerhead, flatback and leatherback turtle – have known distribution within the SWMR (see PMST report in Appendix A). However, no known nesting areas exist within the SWMR region (DSEWPaC 2012b).

The PMST report (Appendix A) identified a total of 12 EPBC Act listed threatened or migratory reptile species, including marine turtles, sea snakes, water monitors and crocodiles, within the NWMR. An additional 23 EPBC Act listed marine sea snake species that do not have a threatened or migratory status were recorded within the NWMR. Appendix A contains a full list.

The PMST report identified a total of ten EPBC Act listed threatened or migratory reptile species within the NMR. An additional 28 EPBC Act listed marine sea snake and sea krait species that do not have a threatened or migratory status were recorded within the NMR. Appendix A contains a full list.

The PMST report identified a total of four EPBC Act listed threatened or migratory marine turtle species within the SWMR. Appendix A contains a full list.

7.2 Marine reptiles in the NWMR

The next subsections focus on the listed marine reptile species known to occur within the NWMR.

Table 7-1 outlines the threatened and migratory marine reptile species that may, are likely or are known to occur within the NWMR, with their conservation status and relevant recovery plans and conservation advice.

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Table 7-1: Threatened and migratory marine reptile species identified by the EPBC Act PMST that may, likely or are known to occur within the NWMR

Species name	Common name	EPBC Act (Commonwealth) (as per PMST report Appendix A)			BC Act (WA)[7]	IUCN Red List (non-statutory)[8]	EPBC Act Part 13 statutory instrument
		Threatened status	Migratory status	Listed	Conservation status	Global status	
Aipysurus apraefrontalis	Short-nosed sea snake	Critically Endangered	N/A	Marine	Critically Endangered	Data Deficient	Approved Conservation Advice for *Aipysurus apraefrontalis* (short-nosed sea snake) (DSEWPaC 2011a)
Aipysurus foliosquama	Leaf-scaled sea snake	Critically Endangered	N/A	Marine	Critically Endangered	Data Deficient	Approved Conservation Advice for *Aipysurus foliosquama* (leaf-scaled sea snake) (DSEWPaC 2011b)
Aipysurus fuscus	Dusky sea snake	Endangered	N/A	Marine	N/A	Endangered	Conservation Advice for *Aipysurus fuscus* (dusky sea snake) (DCCEEW 2024m)
Crocodylus porosus	Salt-water crocodile	N/A	Migratory	Marine	N/A	Least Concern	N/A
Caretta caretta	Loggerhead turtle	Endangered	Migratory	Marine	Endangered	Vulnerable	Recovery Plan for Marine Turtles in Australia 2017–2027 (Commonwealth of Australia 2017)
Chelonia mydas	Green turtle	Vulnerable	Migratory	Marine	Vulnerable	Least Concern	
Dermochelys coriacea	Leatherback turtle	Endangered	Migratory	Marine	Vulnerable	Vulnerable	Recovery Plan for Marine Turtles in Australia 2017–2027 (Commonwealth of Australia 2017) Approved Conservation Advice for *Dermochelys coriacea* (leatherback turtle) (DEWHA 2009c)
Eretmochelys imbricata	Hawksbill turtle	Vulnerable	Migratory	Marine	Vulnerable	Critically Endangered	Recovery Plan for Marine Turtles in Australia 2017–2027 (Commonwealth of Australia 2017)
Lepidochelys olivacea	Olive ridley turtle	Endangered	Migratory	Marine	Endangered	Vulnerable	
Natator depressus	Flatback turtle	Vulnerable	Migratory	Marine	Vulnerable	Data Deficient	

[7] Threatened and Priority Fauna List – July 2025 - https://www.dbca.wa.gov.au/management/threatened-species-and-communities (accessed on 21/05/2026).
[8] IUCN, 2026. The IUCN Red List of Threatened Species. Version 2025-2. https://www.iucnredlist.org (accessed on 21/05/2026).

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Species name	Common name	EPBC Act (Commonwealth) (as per PMST report Appendix A)			BC Act (WA)[7]	IUCN Red List (non-statutory)[8]	EPBC Act Part 13 statutory instrument
		Threatened status	Migratory status	Listed	Conservation status	Global status	
Varanus mertensi	Mertens' water monitor	Endangered	N/A	N/A	Endangered	Endangered	Conservation Advice for *Varanus mertensi* (Mertens' water monitor) (DCCEEW 2023i)
Varanus mitchelli	Mitchell's water monitor	Critically Endangered	N/A	N/A	Critically Endangered	Critically Endangered	Conservation Advice for *Varanus mitchelli* (Mitchell's water monitor) (DCCEEW 2023c)

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7.2.1 Marine turtles

The PMST report (Appendix A) identified six species of threatened and migratory (three Vulnerable and three Endangered) EPBC Act listed marine turtles within the NWMR: the green (*Chelonia mydas*), hawksbill (*Eretmochelys imbricata*), flatback (*Natator depressus*), loggerhead (*Caretta caretta*), leatherback (*Dermochelys coriacea*) and olive ridley (*Lepidochelys olivacea*) turtles (see Table 7-1).

The NWMR supports globally significant breeding populations of four marine turtle species: the green, hawksbill, flatback and loggerhead turtles. 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).

Marine turtles are highly migratory during non-reproductive life phases and have high site fidelity during breeding and nesting life phases. They spend most of their lives 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 7-1 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).

Discrete genetic stocks have evolved within each marine turtle species. This is the result of marine turtles returning to 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, 11 are known to occur within Woodside's three activity areas. Table 7-2 describes key information about marine turtles within the NWMR.

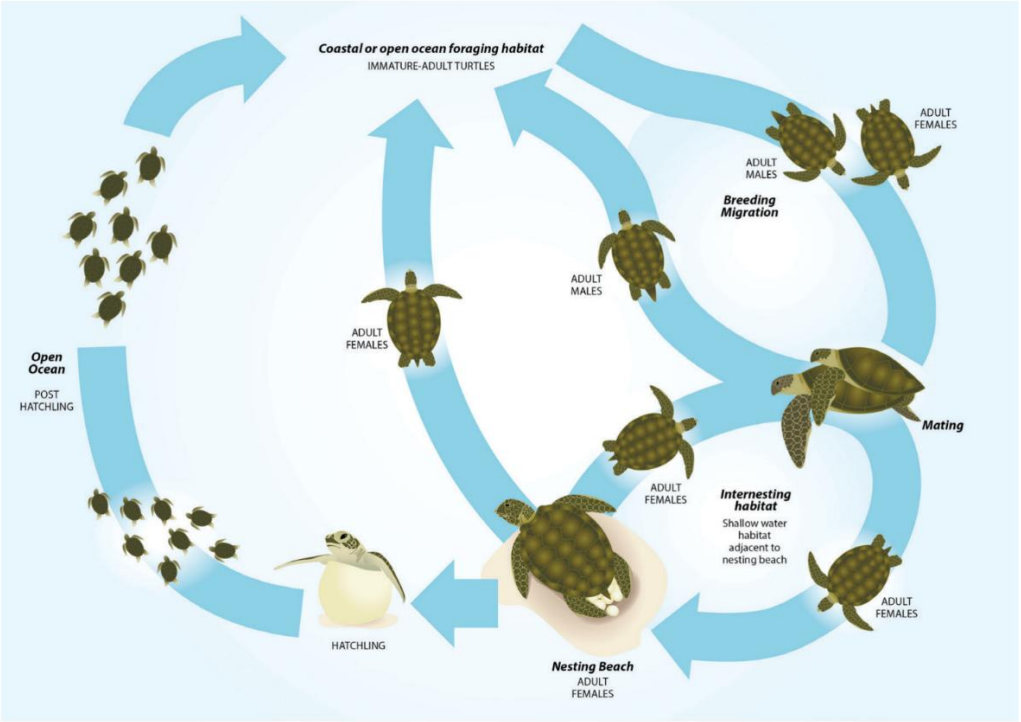


Figure 7-1: Generalised life cycle of marine turtles

Source: Commonwealth of Australia (2017)

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Table 7-2: Marine turtle key information within the NWMR

Species/ genetic stock	Woodside activity area			Key information
	Browse	***NWS/ Scarborough***	***North West Cape***	
Flatback turtle				
Distribution: There are five stocks of flatback turtles described in Australian waters. Note, the extent of genetic relatedness of flatback turtles along the WA coast is currently under review. Flatback turtles forage in waters across the Australian continental shelf and into the continental waters off Indonesia and Papua New Guinea. The flatback turtle is found in the tropical waters of northern Australia, Papua New Guinea and Irian Jaya. It is one of the only two species of marine turtle without a global distribution (Limpus 2007). Nesting is known to only occur in Australia for this species. Diet: Juvenile flatback turtles feed on gastropods, molluscs, squid and siphonophores. Limited data indicate cuttlefish, hydroids, soft corals and jellyfish also form part of the juvenile flatback diet. During the adult stage, they are primarily carnivorous, foraging on soft-bodies invertebrates (Commonwealth of Australia 2017).				
Cape Domett stock (F-CD)	✓	-	-	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 3,250 females per year (Whiting *et al.* 2008). 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 August to September (Commonwealth of Australia 2017). Extending further than the habitat critical internesting buffer, an internesting buffer BIA of 60 km is at Cape Domett and Lacrosse Island.
Pilbara stock (F-Pil)	-	✓	✓	The major rookeries for the F-Pil stock are on the eastern coast of Barrow Island and at Mundabullangana Station near Cape Thouin on the mainland (greater than 500 km south of Broome) (Limpus 2006) and Delambre Island (Commonwealth of Australia 2017). This stock also nests on many islands in the Pilbara and southern Kimberley, including Thevenard, Varanus, Muiron Islands and Montebello group. The Dampier Archipelago contains several regionally significant flatback turtle rookeries and forms part of the core nesting distribution of the F-Pil stock (Fossette *et al.* 2021b). 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 south-west, to Bedout Island in the north and Mulla Mulla Downs Creek in the east (Fossete *et al.* 2021b). Extending further than the habitat critical internesting buffer, a year-round internesting buffer BIA of 60 km is north and north-west of the Montebello Islands. However, use level for this BIA has been defined as very low (Commonwealth of Australia 2017). Satellite tracking data by Whittock *et al.* (2016) found flatback turtles displayed varying internesting movements, with distances travelled ranging between 3.4 and 62.1 km upwards along the coast. Nearshore behaviour was displayed across all Pilbara rookeries, with a consistent occurrence of tagged individuals remaining <10 km of nesting beaches during the internesting period (Whittock *et al.* 2016). Flatbacks exhibit high fidelity to nesting beaches during periods of nesting attempts (Whittock *et al.* 2016; Peel *et al.* 2024).

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Species/ genetic stock	Woodside activity area			Key information
	Browse	*NWS/ Scarborough*	*North West Cape*	
				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).
South-west Kimberley stock (F-swKim)	✓	✓	-	Eighty Mile Beach and Eco Beach are important nesting areas, with nesting occurring year round but peaking in December to January. 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. Juveniles are likely to remain in waters over the Australian continental shelf after hatching. Flatback turtles are usually found around soft sediment habitat that supports benthic invertebrates. Important foraging habitats are not identified for this species (Commonwealth of Australia 2017).
Green turtle				
Distribution: Green turtles are distributed across nine genetically distinct stocks in Australian waters off WA, the NT and Queensland, with limited numbers in New South Wales, Victoria and SA (Commonwealth of Australia 2017). Diet: During their pelagic juvenile stage, green turtles feed on algae, pelagic crustaceans and molluscs. They are primarily herbivorous during their adult stage, foraging on algae, seagrass and mangroves. However, some green turtles maintain a considerable carnivorous component to their diets (Commonwealth of Australia 2017).				
Ashmore Reef stock (G-AR)	✓	-	-	The G-AR stock nests in the Ashmore Reef and Cartier Island AMP areas. Population estimates are not available for Ashmore Reef, although annual breeding numbers are thought to be in the low hundreds (Whiting 2000). 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). Juvenile and adult turtles forage within the tidal/subtidal habitats of offshore islands and coastal waters with coral reef, mangrove, sand, rocky reefs and mudflats where there are algal turfs or seagrass meadows (Commonwealth of Australia 2017).
NWS stock (G-NWS)	-	✓	✓	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 about 20,000 individuals (DSEWPaC 2012a) and the trend for the stock is reported as stable (Commonwealth of Australia 2017). Major rookeries of the G-NWS stock within the NWS/Scarborough activity area are at Lacepede Islands, Montebello Islands and Barrow Island (Tucker *et al.* 2021), with minor rookeries at Boodie, Middle, Serrurier, Thevenard, Lowendal, Rosemary, Legendre and Delambre islands (Commonwealth of Australia 2017). 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. Major rookeries for the G-NWS stock located within the North West Cape Woodside activity area include the North West Cape and Muiron Islands (Commonwealth of Australia 2017). Located on the mainland coast of

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Species/ genetic stock	Woodside activity area			Key information
	Browse	*NWS/ Scarborough*	*North West Cape*	
				the North West Cape, this area is designated habitat critical for the stock and includes an internesting buffer of 20 km radius around the rookery from November to March. 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 turtles, as identified in the Recovery Plan (Commonwealth of Australia 2017). For the 2024–25 Ningaloo Turtle Program season, green turtles were the most active species in the North West Cape division, accounting for 97.08% of total turtle activity (Department of Biodiversity, Conservation and Attractions (DBCA) 2025). The number of green turtle nests has varied among the years since the program began in 2002 (ranging from 1.06 to 18.13 nests per subsection per day), with a long-term average of about 6.16. The average number of green turtle nests recorded during the 2024–25 peak season was slightly above average at 6.6 nests per subsection per day, ranking as the seventh highest out of 23 seasons that have been monitored (DBCA 2025). Long-term trends indicate several clear peaks in activity since the program began, including 2011–12, 2020–21 and 2023–24, where nesting activity was about 2.5 to 11 times greater than lower-activity seasons (DBCA 2025). All seasons coincided with La Niña weather patterns (DBCA 2021).
Scott Reef-Browse Island stock (G-ScBr)	✓	-	-	The G-ScBr stock is a genetically discrete stock known to nest at only two locations within the north-east Indian Ocean – Sandy Islet and Browse Island. There are currently very limited data available for the G-ScBr stock, so population numbers are not known (Commonwealth of Australia 2017). 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 (see Table 6 of the Recovery Plan). Surveys conducted at Scott Reef in 2006, 2008 and 2009 indicate the summer months from late November to February are the preferred breeding season for green turtles at Sandy Islet (Guinea 2009). 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 WA mainland via two distinct post-nesting migration pathways: travelling east and north toward the Bonaparte Archipelago then north along the coast to foraging areas in NT waters, or travelling south to Cape Leveque 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).

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Species/ genetic stock	Woodside activity area			Key information
	Browse	***NWS/ Scarborough***	***North West Cape***	
Hawksbill turtle				
Distribution: There are three genetic stocks of hawksbill in Australia with distribution occurring across northern and eastern Australia and widely within the NWMR, with most of the H-WA stock in the Pilbara. Hawksbill turtles forage in pelagic environments during the first five to ten years of their life cycle. Upon reaching maturity, they return to their hatching location to settle in tropical tidal and subtidal coral and rocky reef habitats (Commonwealth of Australia 2017). They have also been found within seagrass habitats of coastal waters and deeper habitats, although less frequently. They are distributed throughout the NWS of WA (DoE 2026c). Diet: Hawksbill turtles are omnivorous, foraging on algae, sponges, soft corals and other soft-bodies invertebrates (Commonwealth of Australia 2017).				
WA genetic stock (H-WA)	✓	✓	-	Major rookeries of the H-WA stock occur in the NWS/Scarborough Woodside activity area at islands within the Dampier Archipelago (particularly Rosemary Island), Delambre Island and Montebello Islands, with lower density nesting at the Lowendal Islands and Sholl Island (Limpus 2009b). 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. Peak nesting season occurs from October to January (Commonwealth of Australia 2017). Rosemary Island supports the most significant hawksbill turtle rookery in the WA region and one of the largest in the Indian Ocean; about 500 to 1,000 females nest on the island annually, more than at any other WA rookery (Pendoley 2005; Pendoley *et al.* 2016). In the Browse Woodside activity area, Sandy Islet is recognised as a key nesting BIA for this species, with an internesting BIA in the surrounding waters. In 2006, a single hawksbill turtle was tagged and recaptured in 2009 on Sandy Islet (Guinea 2009). There are no other records of hawksbill turtles nesting at Scott Reef, although the Recovery Plan for Marine Turtles recognises some nesting for this species occurs at Scott Reef and Ashmore Reef (Commonwealth of Australia 2017). The hawksbill turtle is also known to occur within the Rowley Shoals Marine Park. However, the habitats within the marine park are not considered to be significant for the species (Department of Environment and Conservation (DEC) 2007a).
Leatherback turtle				
Distribution: There are potentially three leatherback genetic stocks in the Indo-Pacific. However, genetic linkages are yet to be determined for those found in Australian waters. Leatherback turtles are more commonly found foraging in waters on the east coast of Australia. Leatherbacks foraging in WA may come from nesting areas in the Andaman Sea and Indonesia. Small numbers of leatherback turtles nest along the Cobourg Peninsula in the NT and there have been unconfirmed accounts of leatherbacks nesting in WA (Commonwealth of Australia 2017). Diet: The leatherback is an oceanic species remaining planktivorous throughout its life cycle, feeding on jellyfish and large planktonic ascidians such as sea squirts in the water column (Commonwealth of Australia 2017).				

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Species/ genetic stock	Woodside activity area			Key information
	Browse	***NWS/ Scarborough***	***North West Cape***	
Nesting in Australia	✓	-	-	The leatherback turtle is the largest of all marine turtles. They are pelagic feeders and spend most of their lives in the open ocean in tropical, subtropical and temperate waters throughout the world (Limpus 2009a). Leatherback turtles have been recorded feeding in the coastal waters of all Australian states and territories. It is thought they migrate from Australian waters to breed at larger rookeries in neighbouring countries such as Indonesia, Papua New Guinea and Solomon Islands. There are no known foraging sites for this species within WA and no records of leatherback turtles nesting in WA (Commonwealth of Australia 2017).
Loggerhead turtle				
Distribution: There are two genetically distinct stocks of loggerheads in Australia, one in Queensland and one in WA. Foraging occurs in coastal areas in WA and the NT, ranging from nearshore benthic habitats to depths of 55 m (Commonwealth of Australia 2017). Diet: In the post-hatchling stage, the loggerhead feeds on algae, pelagic crustaceans and molluscs. During the adult stage, they are carnivorous, feeding primarily on benthic invertebrates (Commonwealth of Australia 2017).			
WA (LH-WA)	-	-	✓	Loggerhead turtles have a global distribution and occur throughout eastern, northern and western Australia (Limpus 2008). Major rookeries of the LH-WA stock are at Dirk Hartog Island, Muiron Islands, North West Cape and Gnaraloo Bay. These areas are designated habitat critical for the stock and include an internesting buffer of 20 km radius around these rookeries from November to May (Commonwealth of Australia 2017). Loggerhead turtles migrate over 2,600 km between foraging and nesting areas (Limpus 2008). There has been one reported loggerhead nesting at Ashmore Reef (DoE 2026a). The LH-WA stock is one of the largest in the world (Limpus 2009c). The trend for the stock is reported as stable (Commonwealth of Australia 2017). 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 loggerhead turtles, as identified in the Recovery Plan (Commonwealth of Australia 2017). 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 2021). 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).
Olive ridley turtle				
Distribution: There are two genetic stocks in Australia, one in the NT and the other that nests on western Cape York. Low-density nesting occurs in the Kimberley and genetic relatedness is unknown. There is limited data about olive ridley individuals, but satellite tracking indicates they appear to remain on the Australian continental shelf and into waters off Indonesia. Foraging occurs in depths ranging between 15 and 200 m (Commonwealth of Australia 2017). Diet: The olive ridley turtle is primarily carnivorous, feeding on soft-bodied invertebrates including sea pens, soft corals, beche-der-mer (sea cucumbers) and jellyfish (Commonwealth of Australia 2017).			

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Species/ genetic stock	Woodside activity area			Key information
	Browse	***NWS/ Scarborough***	***North West Cape***	
Unknown genetic stock, Kimberley	✓	-	-	The olive ridley turtle is the smallest of all marine turtles. It has a global tropical and subtropical distribution and is known to forage primarily in soft-bottom habitats ranging from 6 to 35 m in nearshore locations (DSEWPaC 2012a), and offshore in depths of up to 200 m (Whiting *et al.* 2018). Olive ridley nesting is recorded as incidental and sparse in the Kimberley region (Whiting *et al.* 2018). It has been recorded nesting in WA only twice, both times in the Kimberley region (RPS Environment and Planning Pty Ltd, 2010), with most nesting occurring in the NT (Commonwealth of Australia 2017). Key nesting locations in the NT include Cape Leveque, Darcy Island, Prior Point, Llanggi and Vulcan Island (Commonwealth of Australia 2017).

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7.2.1.1 Habitat critical to survival for marine turtles

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 species essential to their survival
- 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 five marine turtle species within the NWMR. These are identified, described and mapped in Table 7-3 and Figure 7-2 to Figure 7-6. No habitat critical to survival of leatherback turtles has been identified within the NWMR.

Table 7-3 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.

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Table 7-3: Genetic stock, habitat critical to survival and key life cycle stage seasonality of marine turtles within the NWMR

Species	Woodside activity area			Habitat critical to survival			
	Browse	*NWS/ Scarborough*	*North West Cape*	*Nesting (*major rookery[1])*	*Internesting buffer*	*Seasonality nesting*	*Preferred habitat[2]*
Green turtle							
NWS stock (G-NWS)	✓	✓	✓	Adele Island Maret Island Cassini Island Lacepede Islands* Barrow Island* Montebello Islands (all with sandy beaches)* Serrurier Island Dampier Archipelago Thevenard Island North West Cape* Ningaloo Coast	20 km radius	Nov to Mar (peak Dec to Feb)	Nearshore reef habitats in the photic zone
Ashmore Reef stock (G-AR)	-	-	-	Ashmore Reef* Cartier Reef*		All year (peak: Dec to Jan)	
Scott Reef-Browse Island stock (G-ScBr)	✓	-	-	Scott Reef (Sandy Islet)* Browse Island*		Nov to Mar (peak Jan to Feb)	
Hawksbill turtle							
WA 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	All year (peak: Oct to Jan)	Nearshore and offshore reef habitats

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Species	Woodside activity area			Habitat critical to survival			
	Browse	***NWS/ Scarborough***	***North West Cape***	***Nesting (*major rookery[1])***	***Internesting buffer***	***Seasonality nesting***	***Preferred habitat[2]***
Flatback turtle							
Cape Domett stock (F-CD)	-	-	-	Cape Domett* Lacrosse Island	60 km radius[3]	All year (peak: Aug to Sep)	Nearshore and offshore subtidal and soft bottomed habitats of offshore islands
South-west Kimberley stock (F-swKim)	✓	✓	-	Eighty Mile Beach* Eco Beach* Lacepede Islands		All year (peak: Dec to Jan)	
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 to Mar (peak: Nov to Jan)	
Unknown genetic stock, Kimberley, WA	✓	-	-	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 to Jul	

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Species	Woodside activity area			Habitat critical to survival			
	Browse	***NWS/ Scarborough***	***North West Cape***	***Nesting (*major rookery[1])***	***Internesting buffer***	***Seasonality nesting***	***Preferred habitat[2]***
Loggerhead turtle							
WA stock (LH-WA)	-	-	✓	Dirk Hartog Island* Muiron Islands* Gnaraloo Bay* Ningaloo Coast	20 km radius	Nov to Mar (peak Jan)	Nearshore and island coral reefs, bays and estuaries in tropical and warm temperate latitudes
Olive ridley turtle							
Unknown genetic stock, Kimberley, WA	✓	-	-	Cape Leveque Darcy Island Prior Point Llanggi Vulcan Island	20 km radius	May to Jul	Nearshore coastal areas; present year round over soft-bottom habitats

1. *Major rookeries as outlined in the Recovery Plan (Commonwealth of Australia 2017).*
2. *Preferred habitat as outlined in the Recovery Plan (Commonwealth of Australia 2017).*
3. *Although flatback turtles have a 60 km internesting buffer for habitat critical to survival, Whittock* et al. *(2016) reports that internesting flatback turtles (n=47) from each rookery remained in water <44 m deep, with the mean depth for all turtles at each rookery <10 m. The internesting locations from all five rookeries reached a maximum distance from the nearest coastline of 27.8 km, with the mean maximum distance away from the nearest coastline <6.1 km for each rookery.*

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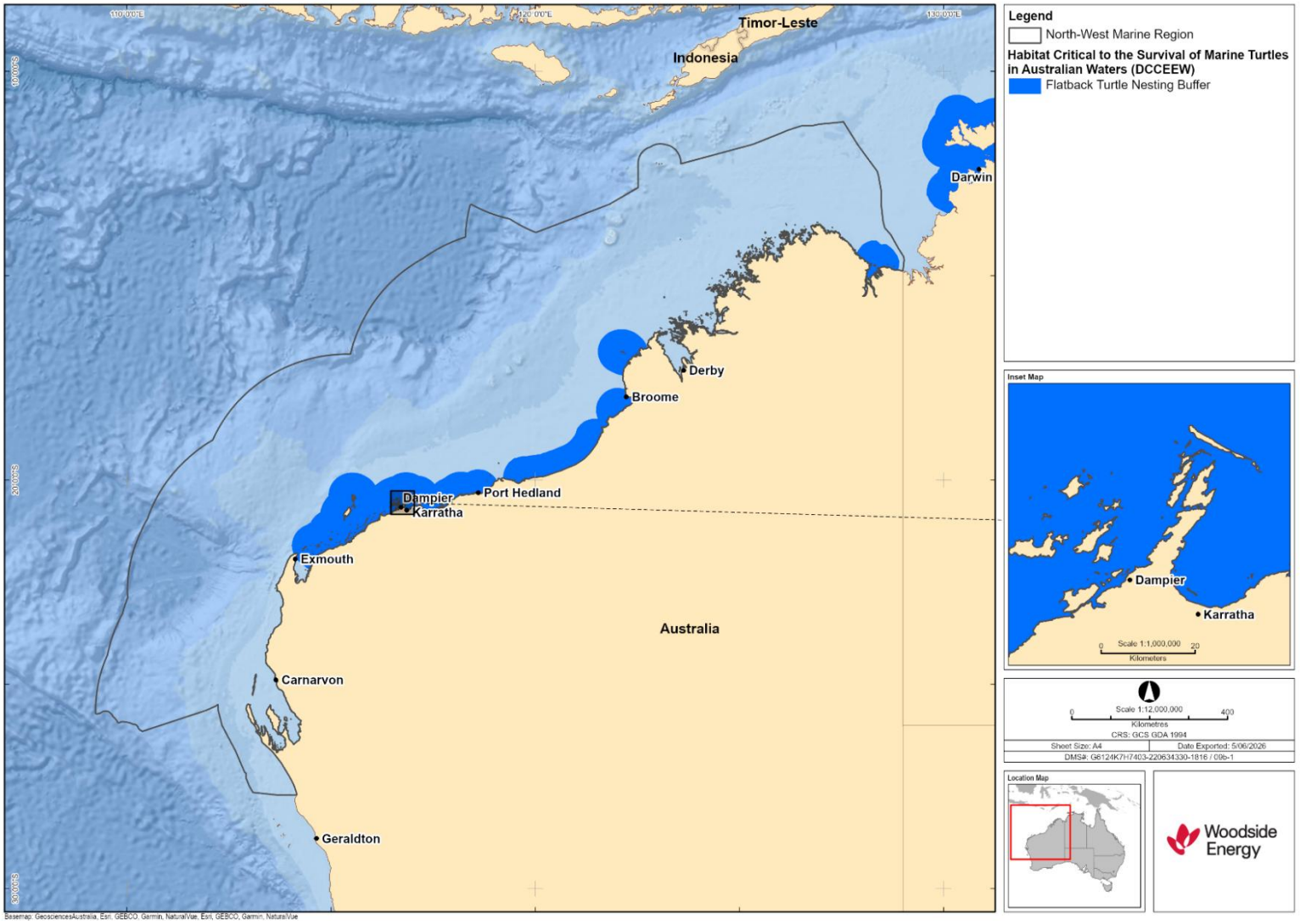


Figure 7-2: Flatback turtle habitat critical to survival (nesting beaches and internesting buffers) for the NWMR

Source: DCCEEW (2025b)

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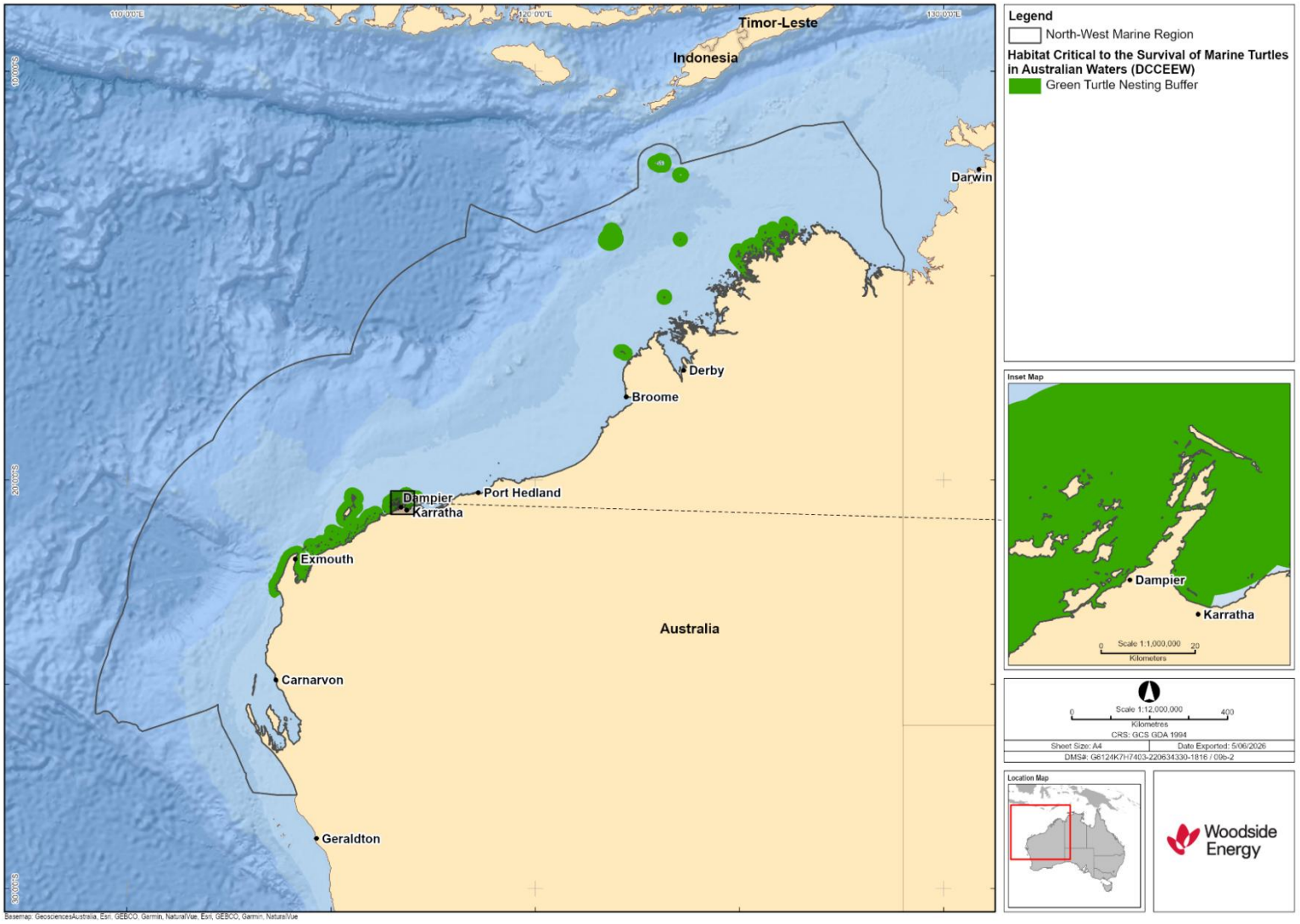


Figure 7-3: Green turtle habitat critical to survival (nesting beaches and internesting buffers) for the NWMR

Source: DCCEEW (2025b)

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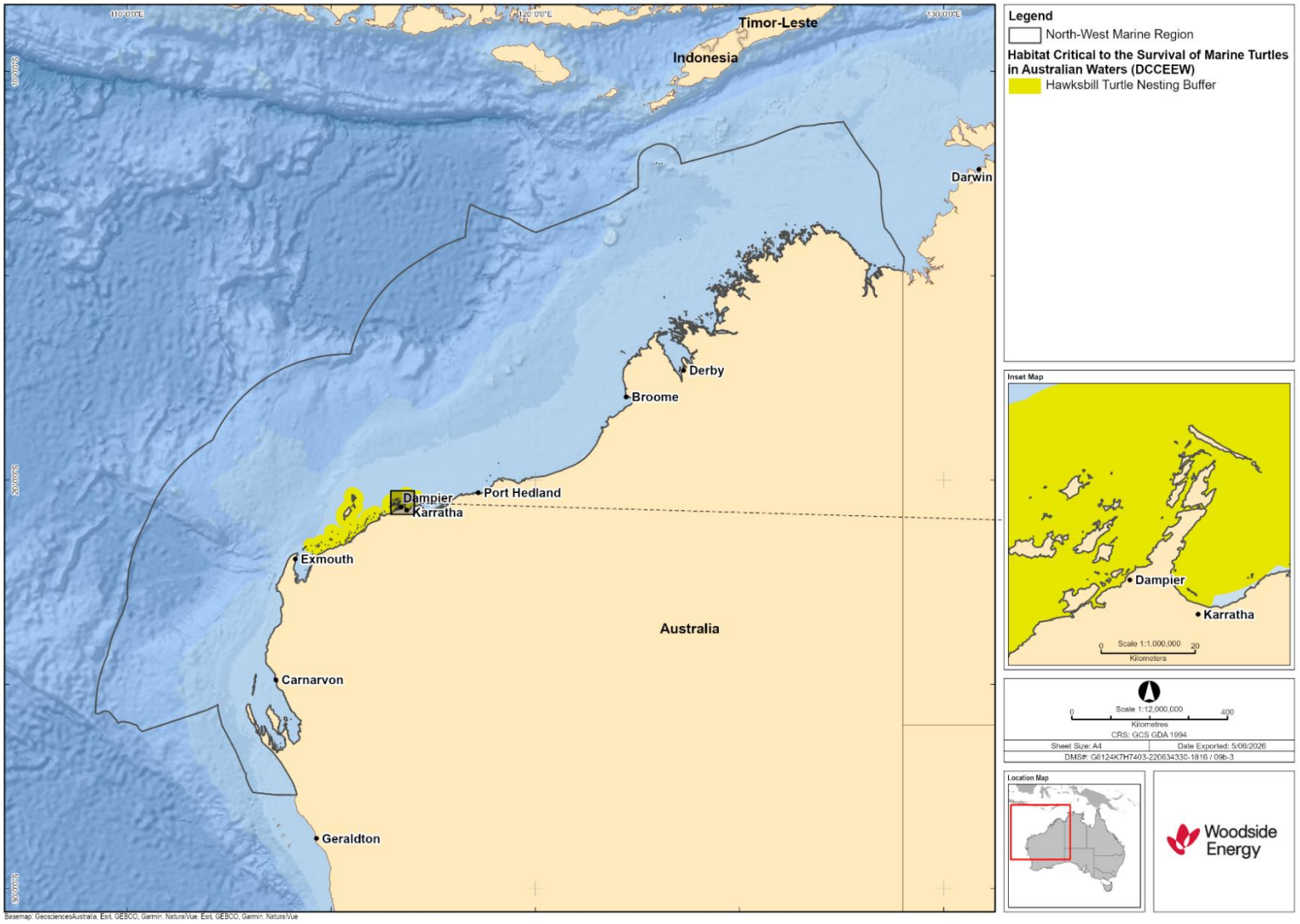


Figure 7-4: Hawksbill turtle habitat critical to survival (nesting beaches and internesting buffers) for the NWMR

Source: DCCEEW (2025b)

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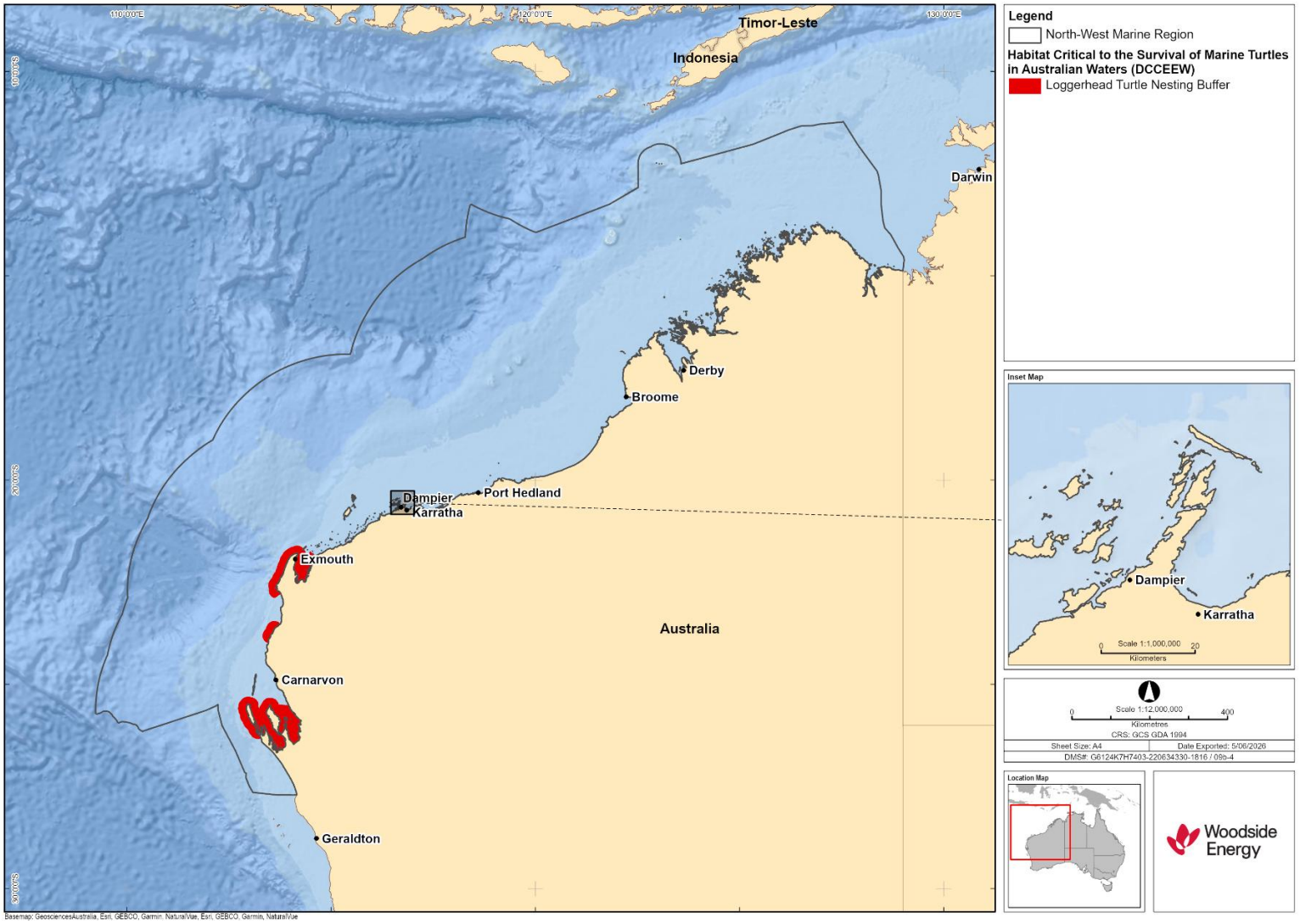


Figure 7-5: Loggerhead turtle habitat critical to survival (nesting beaches and internesting buffers) for the NWMR

Source: DCCEEW (2025b)

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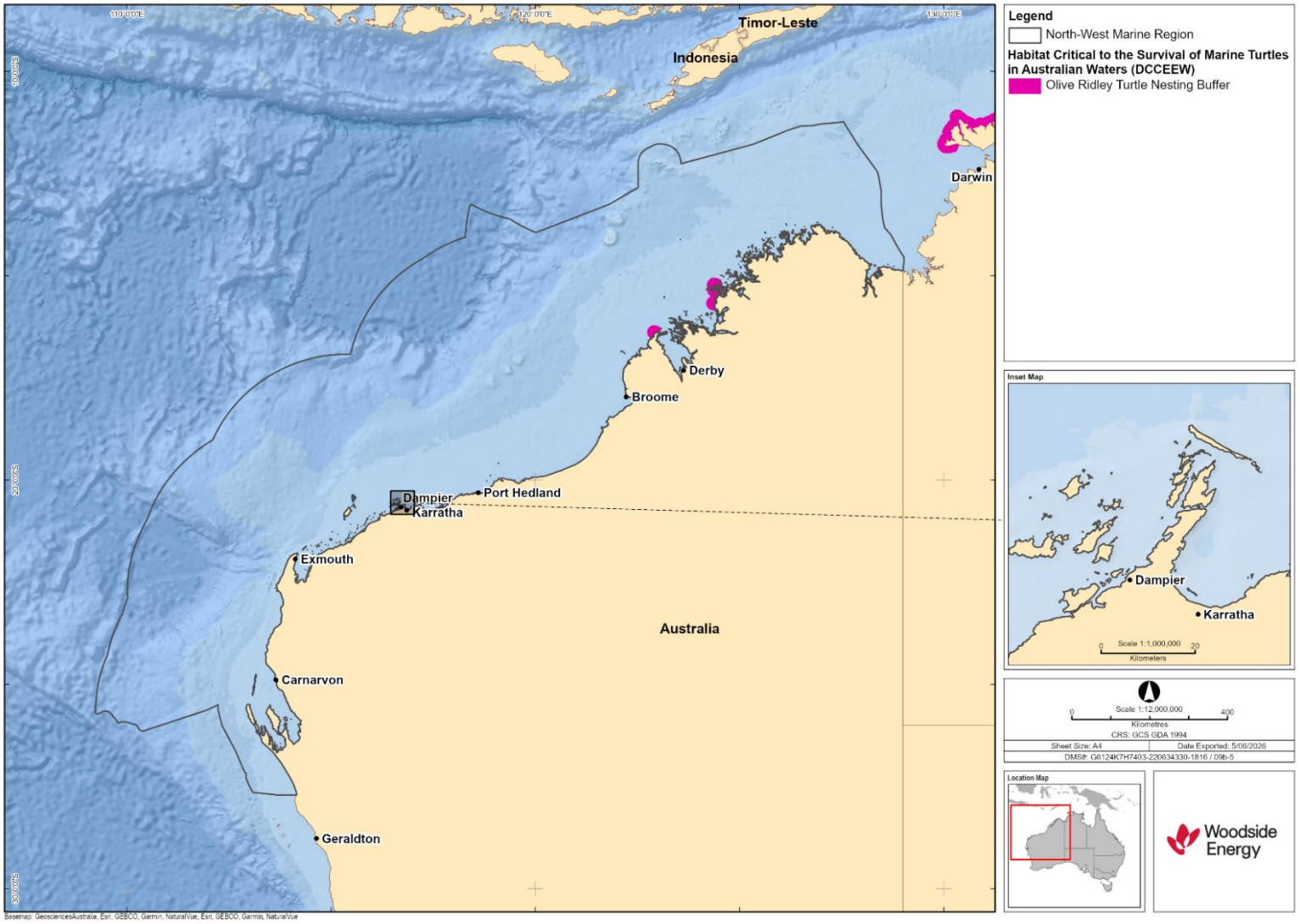


Figure 7-6: Olive ridley turtle habitat critical to survival (nesting beaches and internesting buffers) for the NWMR

Source: DCCEEW (2025b)

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7.2.1.2 Marine turtle biologically important areas

A review of the Australian Marine Spatial Information System (Geoscience Australia 2026), the Marine Bioregional Plan for the North-west Marine Region (DSEWPaC 2012a) and the Recovery Plan for Marine Turtles in Australia (Commonwealth of Australia 2017) identified BIAs for five of the marine turtle species that occur within the NWMR. Table 7-4 describes these.

Table 7-4: Marine turtle BIAs within the NWMR

Species	Woodside activity area			BIAs				
	Browse	***NWS/ Scarborough***	***North West Cape***	***Mating***	***Nesting***	***Internesting***	***Foraging***	***Migration[9]***
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 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	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 around nesting sites. Habitat critical to survival internesting buffer (Table 7-3) is the legally recognised area of protection under the EPBC Act.	• Inshore areas of Barrow Island • Montgomery Reef • Montebello Islands • Dixon Island • Ashmore Reef • Seringapatam Reef and Scott Reef • De Grey River area to Bedout Island • Around the islands between Cape Preston and Onslow and inshore of Barrow Island • Dampier Archipelago (islands west of the Burrup Peninsula) • Legendre Island and Huay Island • Delambre Island	Migration corridor at Dampier Archipelago (islands west of the Burrup Peninsula). Green turtles can migrate more than 2,600 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 Pilbara Stock and another used by the NWS Kimberley Stock and the G-ScBr stock, with some overlap at the northern and southern extents respectively. This study showed the foraging

[9] Migration BIA included in Australian Marine Spatial Information System (Geoscience Australia 2026). General information for migratory behaviours also provided.

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Species	Woodside activity area			BIAs				
	Browse	*NWS/ Scarborough*	*North West Cape*	*Mating*	*Nesting*	*Internesting*	*Foraging*	*Migration*[9]
					• Cassini Island		• Joseph Bonaparte Gulf • In waters adjacent to James Price Point	distribution of green turtles from two stocks in WA expands throughout north-west and northern Australian coastal waters, including the NT and Queensland.
Hawksbill turtle	✓	✓	✓	• 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 (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) and Recovery Plan for Marine Turtles in Australia 2017–2027 (Commonwealth of Australia 2017). Year-round and seasonal 20 km internesting buffer BIAs are around nesting sites. Habitat critical to survival internesting buffer (Table 7-3) is the legally recognised area of protection under the EPBC Act.	Recent data shows foraging ranges from north of Exmouth Gulf to offshore Broome (Fossette *et al.* 2021a). Known foraging BIAs in the NWMR include: • Lowendal Island group • Delambre Island • around Dixon Island • in the De Grey River area to Bedout Island • around the islands between Cape Preston and Onslow and inshore of Barrow Island • around the islands of the Dampier Archipelago (west of the Burrup Peninsula)	Migration corridor at Dampier Archipelago (islands west of the Burrup Peninsula). Individuals may migrate up to 2,400 km between their nesting and foraging grounds (DSEWPaC 2012a), although reproductive migration distances over 1,000 km appear less common in hawksbill turtles than other species (Fossette *et al.* 2021a). Recent satellite tracking data show turtles migrating from WA rookeries remained on the continental shelf, with most following the coastline and dispersing in a north-easterly direction, with some turtles from the Montebello Archipelago and

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Species	Woodside activity area			BIAs				
	Browse	***NWS/ Scarborough***	***North West Cape***	***Mating***	***Nesting***	***Internesting***	***Foraging***	***Migration[9]***
							• Ashmore Reef	Lowendal Islands moving in a south-westerly direction and some stopping around Barrow Island. A migratory corridor was observed from 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	Flatback turtles nest exclusively in the northern regions of Australia, between latitudes of 22°S in the west and 25°S in the east. There are seven genetically distinct stocks, identified across 17 rookeries, with Delambre Island representing a key nesting site in the NWS genetic stock (Whiting *et al.* 2025). Known nesting BIA locations in the NWMR include: • Thevenard Island – South Coast (summer) high use on beaches with high dune height	Locations of 60 km internesting buffer BIAs for flatback turtles are described in the Recovery Plan for Marine Turtles in Australia 2017–2027 (Commonwealth of Australia 2017). Year-round and seasonal internesting buffer BIAs of 60 km are around nesting sites, extending 20 km further than the habitat critical to survival. Habitat critical to survival internesting buffer (60 km, Table 7-3) is the legally recognised area of protection under the EPBC Act. Flatback turtles preferentially use shallow continental	• Islands between Cape Preston and Onslow and inshore of Barrow Island. • Montebello Islands • Dampier Archipelago (islands west of the Burrup Peninsula) • Legendre Island and Huay Island • Delambre Island • Joseph Bonaparte Depression • In waters adjacent to James Price Point Bathymetry and distance from the coast are key environmental features that influence the suitability of flatback	Migration corridor at Dampier Archipelago (islands 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 some flatback turtles migrate long distances 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

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Species	Woodside activity area			BIAs				
	Browse	*NWS/ Scarborough*	*North West Cape*	*Mating*	*Nesting*	*Internesting*	*Foraging*	*Migration*[9]
					• Barrow Island • Montebello Islands (including Hermite Island, North West Island, Trimouille Island) • Dampier Archipelago (islands 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 Beach) and Eighty Mile Beach • Lacepede Islands	shelf waters near nesting beaches during the internesting period, with habitat suitability strongly influenced by bathymetry, proximity to the coastline and sea surface temperature. Tracking data from multiple rookeries show internesting individuals remain in relatively shallow waters near the shore in depths of generally <44 m, while typically averaging under 10 m. Internesting flatbacks rarely exceed 28 km from the coastline and usually remain within about 6 km. Habitat suitability modelling by *Whittock et al*. (2016) indicates internesting areas are spatially constrained, nearshore and associated with relatively warm shelf waters (about 27 to 30°C), rather than being widely dispersed offshore.	turtle foraging and behaviours in the NWMR (Hounslow *et al.* 2025). Suitable habitats for flatback foraging include soft-sediment habitats containing a plethora of invertebrates, sea pens and sea cucumbers, which are their typical diet. These habitats are usually in intertidal and nearshore areas about 5 to 10 km from the coast in areas characterised by shallow bathymetry (<15 m depth). The probability of suitable foraging habitats for flatbacks declines in depths >15 m and >10 km from the coastline (Hounslow *et al.* 2025).	shallow coastal waters thought to be near their natal beaches (DSEWPaC 2012a). A study predicting the dispersal of flatback turtle hatchlings found core areas were predominantly on the continental shelf (<200 m depth contour) during all dispersal phases, indicating flatback turtles remain in neritic areas (Wilson *et al.* 2023). Flatback turtles tagged at Roebuck Bay showed high residency, using the area year round as a foraging site, with movement patterns strongly influenced by tides rather than long-distance displacement (Hounslow *et al.* 2025). Flatback turtles are endemic to northern Australia and have a largely cryptic life history, from entering the ocean immediately after hatching until the turtles return to nest as adults. Therefore, there

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Species	Woodside activity area			BIAs				
	Browse	***NWS/ Scarborough***	***North West Cape***	***Mating***	***Nesting***	***Internesting***	***Foraging***	***Migration[9]***
								are knowledge gaps about juvenile demographics, growth, habitat use and migratory distribution (Whiting *et al.* 2025).
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 internesting buffer BIAs for loggerhead turtles are described in the Marine Bioregional Plan for the North-west Marine Region (DSEWPaC 2012a) and the Recovery Plan for Marine Turtles in Australia 2017–2027 (Commonwealth of Australia 2017). Year-round and seasonal 20 km internesting buffer BIAs are around nesting sites. Habitat critical to survival internesting buffer (Table 7-3) is the legally recognised area of protection under the EPBC Act.	• De Grey River area to Bedout Island • Western Joseph Bonaparte Depression • 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).

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Species	Woodside activity area			BIAs				
	Browse	***NWS/ Scarborough***	***North West Cape***	***Mating***	***Nesting***	***Internesting***	***Foraging***	***Migration[9]***
Olive ridley turtle	-	-	-	No mating BIA identified within the NWMR	No nesting BIA identified within the NWMR	No internesting BIA identified within the NWMR	Western Joseph Bonaparte Depression and Gulf	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.

Source: Geoscience Australia (2026)

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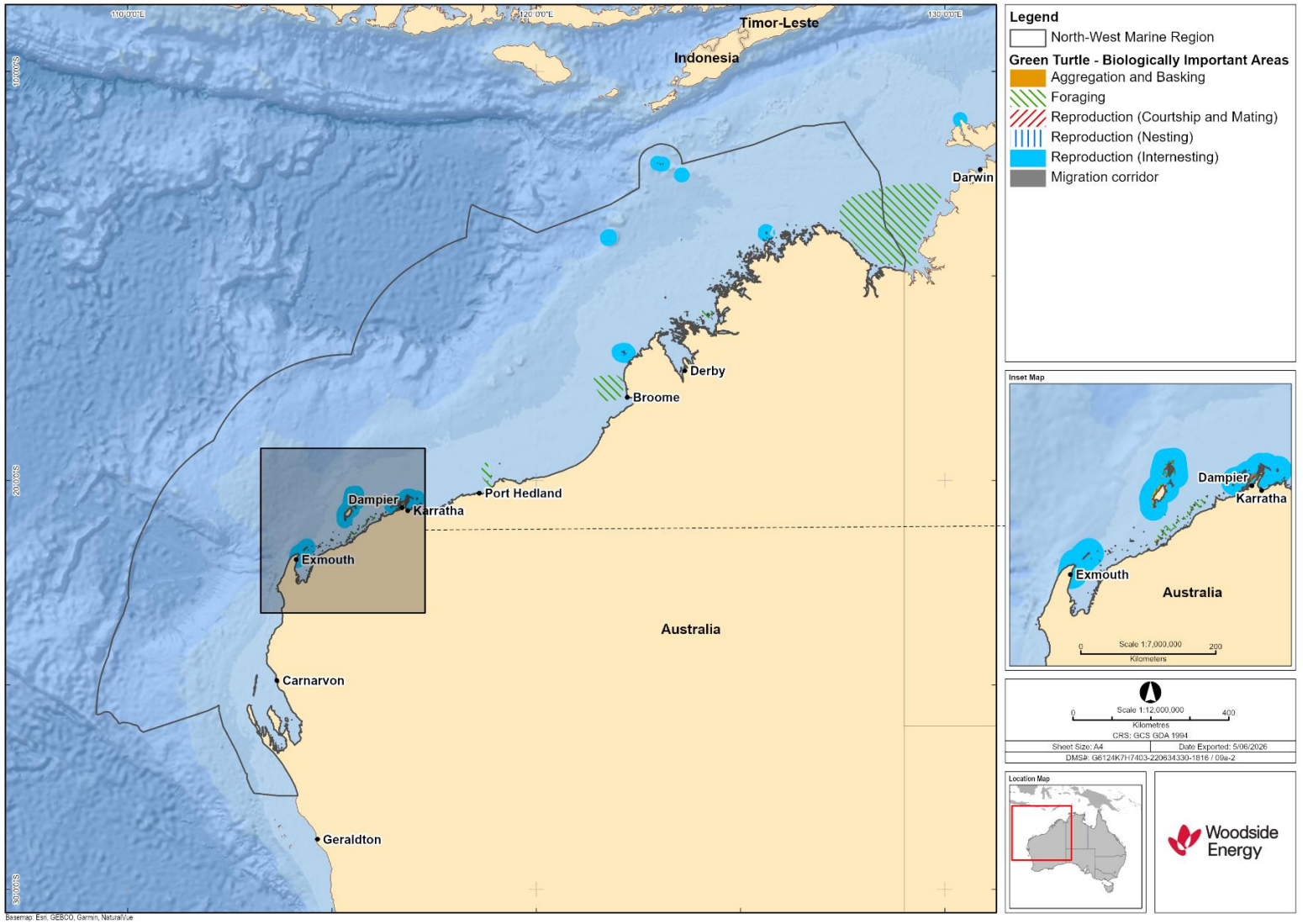


Figure 7-7: Green turtle BIAs within the NWMR

Source: DCCEEW (2025b)

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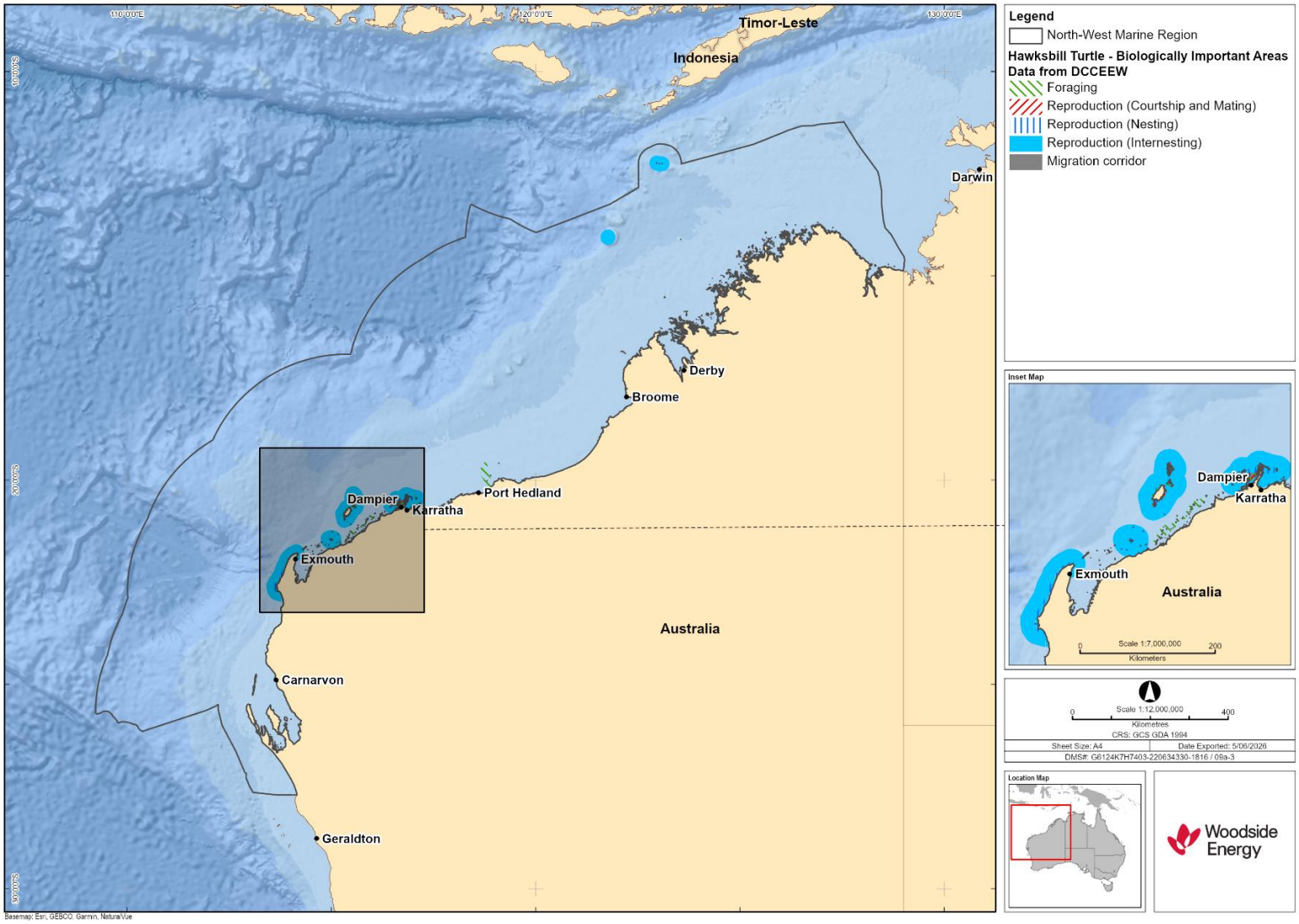


Figure 7-8: Hawksbill turtle BIAs within the NWMR

Source: DCCEEW (2025b)

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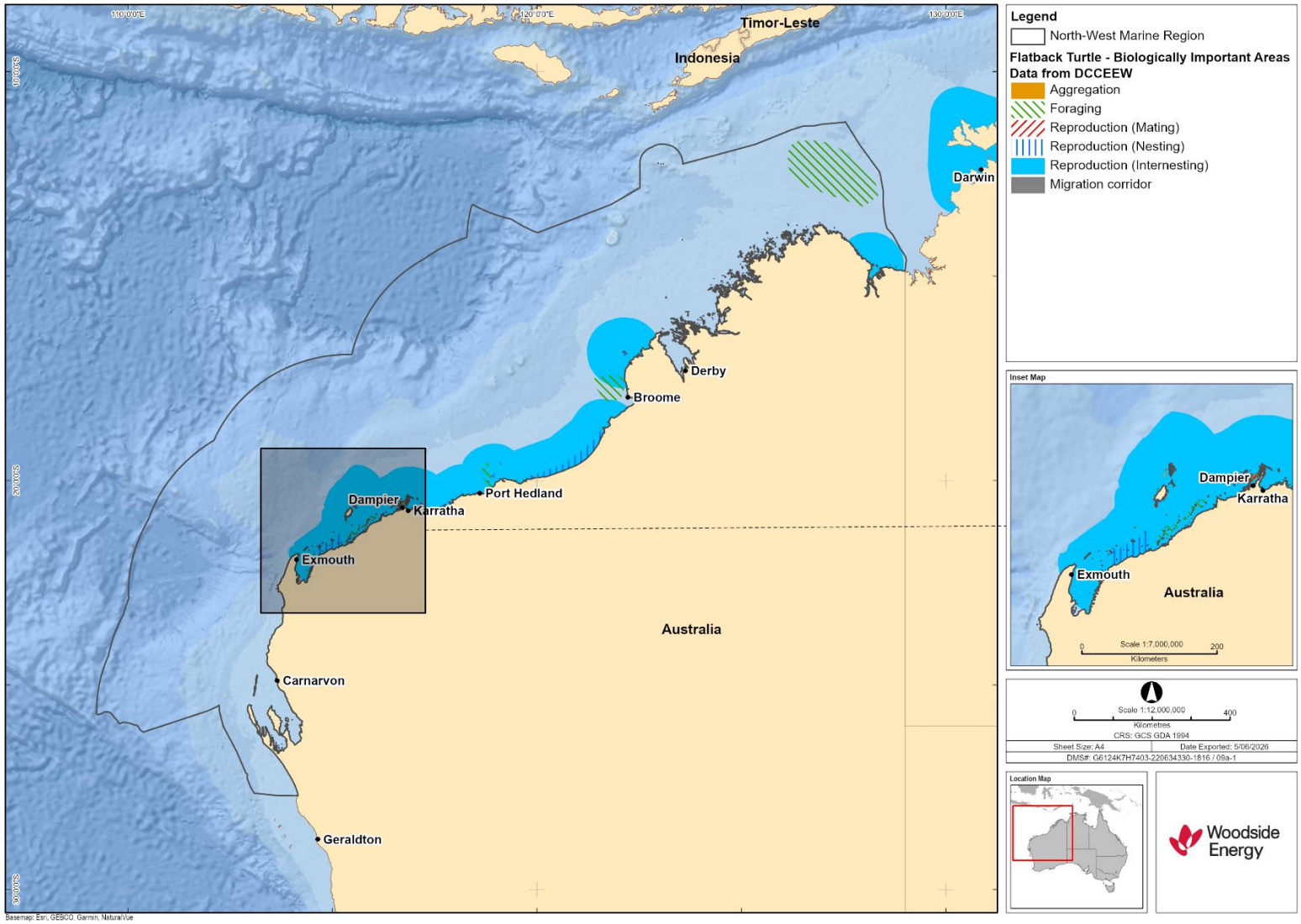


Figure 7-9: Flatback turtle BIAs within the NWMR

Source: DCCEEW (2025b)

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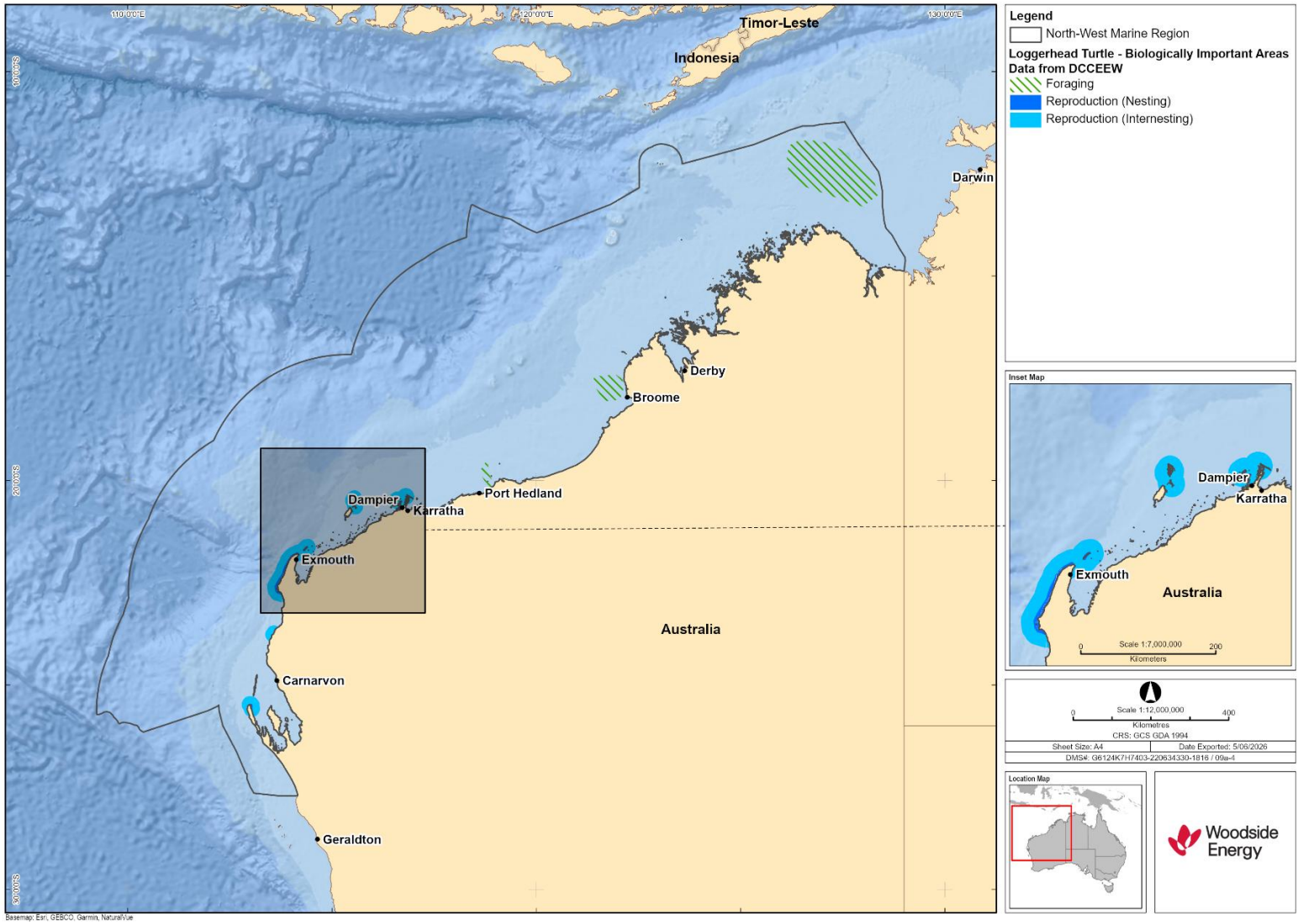


Figure 7-10: Loggerhead turtle BIAs within the NWMR

Source: DCCEEW (2025b)

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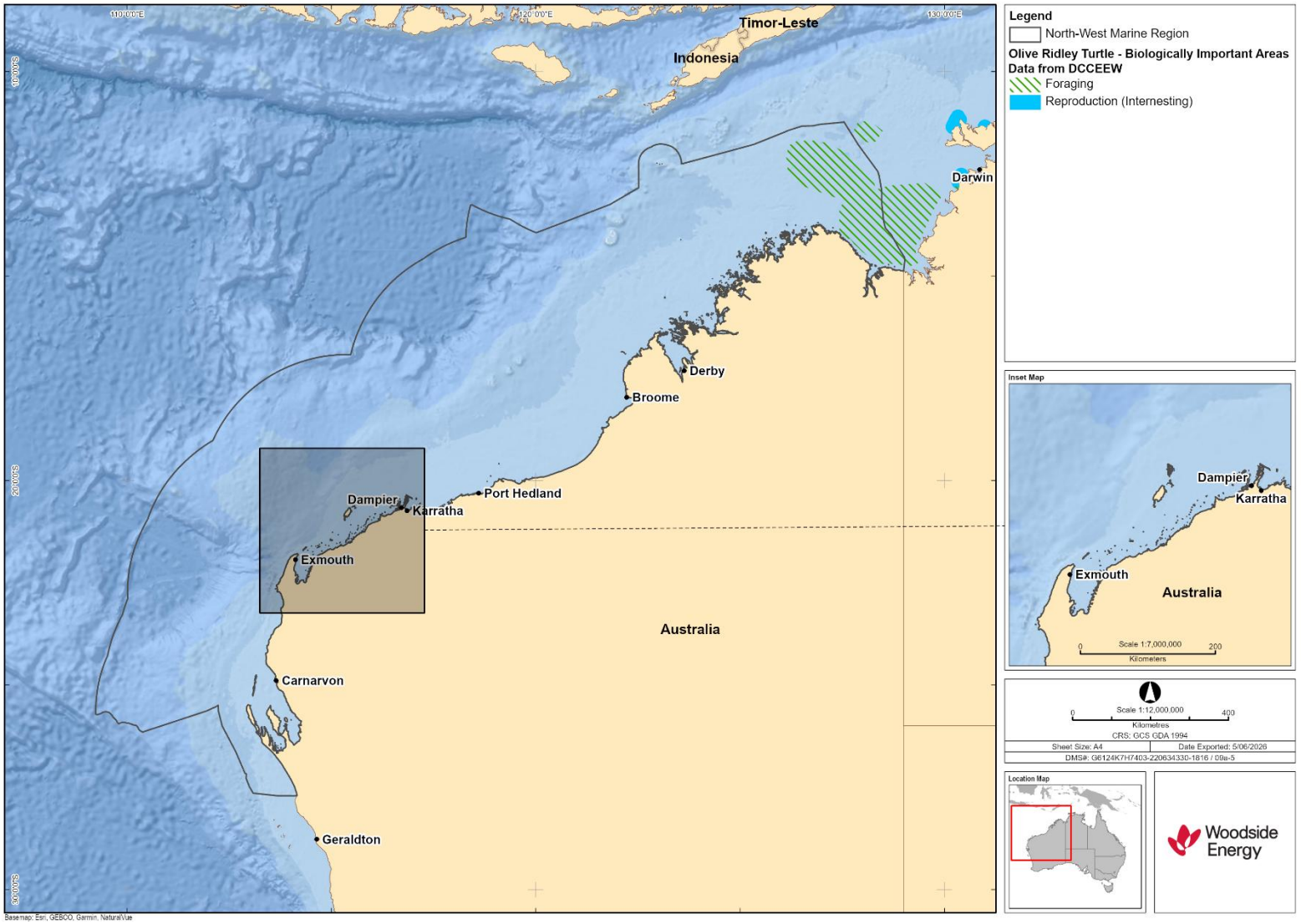


Figure 7-11: Olive ridley turtle BIAs within the NWMR

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7.2.2 Sea snakes

Sea snakes are widely distributed in the NWMR and NMR, but less common in the SWMR. They 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).

The PMST report identified a total of three EPBC Act listed threatened sea snakes (Table 7-1) and a further 23 EPBC Act listed marine sea snake species within the NWMR (Appendix A). Of these species, Guinea (2007a) and Udyawer *et al.* (2016) have described four of these species as being endemic to reef habitats in the remote parts of the NWMR. These species include the:

- 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 threatened species (Critically Endangered or Endangered) under the EPBC Act (see Table 7-1). Table 7-5 presents further information about their preferred habitat, diet and habitat location.

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 about 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 about species distributions in the NWMR (Udyawer *et al.* 2016). Udyawer *et al.* (2020) used a correlative modelling approach to understand habitat associations and identify suitable habitats for five sea snake species (*A. apraefrontalis*, *A. foliosquama*, *A. fuscus*, *A. l. pooleorum* and *A. tenuis*). Species-specific habitat suitability was modelled across 804,244 km² of coastal waters along the NWS, and the resulting habitat suitability maps enabled the identification of key locations of suitable habitat for these five species (see Table 7-5).

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.

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Table 7-5: Information about threatened sea snake species within the NWMR

Species	Preferred habitat and diet	Habitat location
Short-nosed sea snake	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).
Leaf-scaled sea snake	Preferred habitat: The leaf-scaled sea snake occurs in shallow protected areas of reef flats, typically in water depth less than 10 m. Diet: Primarily shallow water coral-associated wrasse, gudgeons, clinids and eels (McCosker 1975; Voris 1972; Voris and Voris 1983).	The leaf-scaled sea snake has only been recorded at Ashmore and Hibernia reefs (Guinea and Whiting 2005), indicating it has a very limited distribution. Key locations of suitable habitat: Ashmore Reef, Shark Bay, Exmouth Gulf, Barrow Island and Montebello Islands (Udyawer *et al.* 2020).
Dusky sea snake	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. It has only been recorded at depths of 0 to 20 m but may occur in deeper areas with less survey effort (DCCEEW 2024m). Diet: Stomach content analyses have identified benthic gobies, wrasses and occasionally fish eggs (DCCEEW 2024m).	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 2024m).

7.2.3 Crocodiles

The PMST report identified the salt-water crocodile (*Crocodylus porosus*) is listed as a migratory species under the EPBC Act within the NWMR (Table 7-1). This species is usually found in Australian coastal waters, including estuaries, lakes, inland swamps and marshes, and have been recorded persisting in freshwater bodies hundreds of kilometres inland. In 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 (DoE 2026b).

The preferred nesting habitat of the salt-water crocodile includes elevated and isolated freshwater swamps with no tidal movements, with vegetation and floating rafts of vegetation for nesting. Nesting usually occurs between November and May, with a peak between January and February (DoE 2026b). No BIAs for salt-water crocodile have been identified in the NWMR.

7.2.4 Water monitors

The PMST report identified a total of two EPBC Act listed threatened water monitors within the NWMR (Table 7-1) that inhabit coastal areas. Table 7-6 describes these.

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Table 7-6: Water monitors identified within the NWMR

Species	Key information
Mertens' water monitor	Mertens' water monitor (*Varanus mertensi*) is listed as endangered under the EPBC Act. This species occurs sparsely across the tropical areas of the Kimberley extending to the NT, inhabiting coastal areas and near coastal islands. Extensive surveys in the Kimberley found the Mertens' water monitor on 11 of the islands off the coast of the Kimberley and NT. These islands represent <1% of the modelled distribution of this species (DCCEEW 2023i). This species is highly aquatic and seldom ventures more than 5 to 10 m from the water's edge, except when travelling between core aquatic sites. It inhabits swamps, creeks, floodplains, lagoons, swamps and perennial and semi-perennial pools, and is known to bask on structures in and surrounding water bodies (DCCEEW 2023i). Habitat critical to the survival of the species has not been mapped but includes all areas where the species persists after cane toads have established and areas within known distribution where habitat occurs or can be restored (terrestrial) (DCCEEW 2023i). No BIAs for Mertens' water monitor have been identified in the NWMR.
Mitchell's 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 NT 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 but includes all areas where the species persists after cane toads have established 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.

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8. MARINE MAMMALS

8.1 Regional context

The offshore waters of WA provide important habitat for marine mammals, including areas that support key life stages such as breeding, calving, foraging and migration. As described in the Marine Bioregional Plan for the North-west Marine Region (DSEWPaC 2012a), of the 45 species of cetacean occurring in Australian waters, 21 occur regularly in the waters of the NWMR and a further 12 may occur infrequently. In the waters of the NMR, nine of the 45 cetacean species occur regularly and a further 15 may occur infrequently (DSEWPaC 2012c). In the SWMR, 33 species of cetaceans occur frequently, with a further ten that may occur infrequently in the region (DSEWPaC 2012b).

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, particularly the humpback whale, are known to use the region for migration and calving, and the pygmy blue whale is known to use the region for foraging and as a migration pathway between southern feeding and northern breeding and feeding areas north of the equator. The waters of the NWMR and the NMR also support globally significant dugong populations (DSEWPaC 2012a; 2012c).

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 cetaceans, 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).

The PMST report (Appendix A) identified a total of 15 EPBC Act listed threatened or migratory marine mammal species, including cetaceans, one dugong and one pinniped, within the NWMR (Table 8-1). An additional 22 EPBC Act listed cetacean species that do not have a threatened or migratory status were recorded within the NWMR. Appendix A provides a full list.

The PMST report identified a total of 12 EPBC Act listed threatened or migratory marine mammal species, including cetaceans and one dugong, within the NMR. An additional 15 EPBC Act listed cetacean species that do not have a threatened or migratory status were recorded within the NMR. Appendix A provides a full list.

The PMST report identified a total of 12 EPBC Act listed threatened or migratory cetaceans and one pinniped species within the SWMR. An additional 29 EPBC Act listed cetacean species, and one pinniped species, that do not have a threatened or migratory status were recorded within the SWMR. Appendix A provides a full list.

8.2 Marine mammals in the NWMR

Table 8-1 outlines the threatened and migratory marine mammal species identified by the PMST that may, are likely or are known to occur within the NWMR, with their conservation status and relevant recovery plans and conservation advice.

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Table 8-1: Threatened and migratory marine mammal species identified by the EPBC Act PMST that may, likely or are known to occur within the NWMR

Species name	Common name	EPBC Act (Commonwealth) (as per PMST report Appendix A)			BC Act (WA)[10]	IUCN Red List (non-statutory)[11]	EPBC Act Part 13 statutory instrument
		Threatened status	*Migratory status*	*Listed*	*Conservation status*	*Global status*	
Cetaceans – Mysticeti							
Balaenoptera borealis	Sei whale	Vulnerable	Migratory	Cetacean	Endangered	Endangered	Conservation Advice *Balaenoptera borealis* sei whale (Threatened Species Scientific Committee 2015a)
Balaenoptera physalus	Fin whale	Vulnerable	Migratory	Cetacean	Endangered	Vulnerable	Conservation Advice *Balaenoptera physalus* fin whale (Threatened Species Scientific Committee 2015c)
Balaenoptera edeni	Bryde's whale	N/A	Migratory	Cetacean	Migratory	Least Concern	N/A
Balaenoptera bonaerensis	Antarctic minke whale	N/A	Migratory	Cetacean	Migratory	Near Threatened	N/A
Balaenoptera musculus	Blue whale	Endangered	Migratory	Cetacean	Endangered	Endangered	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)
Balaenoptera omurai	Omura's whale	N/A	Migratory	Cetacean	N/A	Data Deficient	N/A

[10] Threatened and Priority Fauna List – July 2025 - https://www.dbca.wa.gov.au/management/threatened-species-and-communities (accessed on 21/05/2026).
[11] IUCN, 2026. The IUCN Red List of Threatened Species. Version 2025-2. https://www.iucnredlist.org (accessed on 21/05/2026).

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Species name	Common name	EPBC Act (Commonwealth) (as per PMST report Appendix A)			BC Act (WA)[10]	IUCN Red List (non-statutory)[11]	EPBC Act Part 13 statutory instrument
		Threatened status	***Migratory status***	***Listed***	***Conservation status***	***Global status***	
Eubalaena australis	Southern right whale	Endangered	Migratory	Cetacean	Vulnerable	Least Concern	National Recovery Plan for the Southern Right Whale *Eubalaena australis* (DCCEEW 2024a)
Megaptera novaeangliae	Humpback whale	N/A	Migratory	Cetacean	Conservation dependent	Least Concern	Listing Advice *Megaptera novaeangliae* Humpback whale (*DAWE 2022*)
Cetaceans – Odontoceti							
Physeter macrocephalus	Sperm whale	N/A	Migratory	Cetacean	Vulnerable	Vulnerable	N/A
Orcinus orca	Killer whale (orca)	N/A	Migratory	Cetacean	Migratory	Data Deficient	N/A
Orcaella heinsohni	Australian snubfin dolphin	Vulnerable	Migratory	Cetacean	Priority	Vulnerable	Conservation Advice for *Orcaella heinsohni* (Australian snubfin dolphin) (DCCEEW 2025d)
Sousa chinensis	Indo-Pacific humpback dolphin (Australian humpback dolphin)	Vulnerable	Migratory	Cetacean	Priority	Vulnerable	Conservation Advice for *Sousa sahulensis* (Australian humpback dolphin) (DCCEEW 2025e)
Tursiops aduncus	Indo-Pacific/ Indian Ocean spotted bottlenose dolphin (Arafura/ Timor Sea populations)	N/A	Migratory	Cetacean	N/A	N/A	N/A
Sirenians and pinnipeds							
Dugong dugon	Dugong	N/A	Migratory	Marine	Migratory	Vulnerable	N/A

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Species name	Common name	EPBC Act (Commonwealth) (as per PMST report Appendix A)			BC Act (WA)[10]	IUCN Red List (non-statutory)[11]	EPBC Act Part 13 statutory instrument
		Threatened status	***Migratory status***	***Listed***	***Conservation status***	***Global status***	
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 2020) (in effect under the EPBC Act from 23 December 2020)

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8.2.1 Cetaceans

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).

The PMST report identified 35 EPBC Act listed cetacean species as potentially occurring or having habitat within the NWMR (Appendix A). Of those, 13 cetacean species are listed as threatened or migratory (Table 8-1), including baleen whales, toothed whales and dolphins that occur within the NWMR.

Table 8-2: Information about the threatened/migratory cetacean species within the NWMR

Species	Key information
Baleen whales (Mysticeti) – low frequency hearing	
Humpback whale	In Australian waters, two genetically distinct populations of humpback whales migrate annually along the west (Group IV/D) and east (Group V) coasts between May and November (Jenner *et al.* 2001), The population of humpback whales (*Megaptera novaeangliae*) known as Group IV/D migrate annually from Antarctic feeding grounds, passing along the coast of WA 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 WA subpopulation is considerably variable (DAWE 2022). The population has been increasing in size at a rate of about 10% per annum since whaling ceased in WA waters by 1963 (Thums *et al.* 2018) and population numbers have increased from about 2,000 to 3,000 individuals in 1991 to between 19,200 and 33,850 individuals in 2008 (Bannister and Hedley 2001; Bejder *et al.* 2019; Hedley *et al.* 2011). Aerial surveys off the WA coast between 2000 and 2008 produced a population estimate for Group IV 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 WA subpopulation had recovered to 90% (74 to 98% probability interval) of its pre-whaling levels and projected that by 2020 it would have reached 98% (88 to 100% probability interval) (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 20*22) after a previous listing as vulnerable for many decades. 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 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. 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 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 to 603 in 2013 and 557 to 725 in 2015 (Irvine *et al.* 2018). Most calves sighted in both years (85% in 2013; 94% in 2015) were neonates, and these observations indicate a minimum of about 20% of the expected number of calves of this population are born near or south of North West Cape. Thus, the calving grounds for the Group IV population extend south from Camden Sound to at least North West Cape, 1,000 km south-west of the currently recognised calving area (Irvine *et al.* 2017) and further south, as reported for Geographe Bay and Flinders Bay (in July and August) in south-west WA (Jolliffe *et al.* 2024). Table 10-1 presents the seasonal presence of humpback whales. Migration, breeding and calving BIAs for the humpback whale within the NWMR are presented in Table 8-3 and Figure 8-2.
Blue whale	There are two recognised subspecies of blue whale in the southern hemisphere, both of which are recorded in Australian waters. These are the southern (or 'true') blue whale (*Balaenoptera musculus*) and the 'pygmy' blue whale (*Balaenoptera musculus brevicauda*) (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 (as in, not in Antarctic waters). On this basis, it is reasonably assumed all blue whales sighted in the NWMR are likely to be pygmy blue whales.

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Species	Key information
	The migratory population, known as the East Indian Ocean pygmy blue whale population, migrates 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 migrating across long distances (Commonwealth of Australia 2015a). McCauley *et al.* (2018) describe three migratory stages around Australia for the East Indian Ocean 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 next 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. Extensive passive acoustic monitoring throughout the NWMR indicates migratory timing and distribution of pygmy blue whales (noting this survey method detects vocalising whales): • Acoustic monitoring 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. • McCauley (2011b) recorded northbound migration between mid-April and early August and southbound migration between October and December and possibly into January for the Scott Reef area from 2006 to 2009, noting the absence of any southbound detection in 2007. • Noise loggers deployed in 2019 for a full year detected pygmy blue whales on their northern and southern migration. The noise loggers were at various locations about 40 to 50 km west of the activity area, and in about 1,300 m water depth. Many pygmy blue whales detected on their northern migration occurred from mid-April to the end of July, then again on their southern migration in November through to early December (Chevron Australia 2019). • 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 northwest of North West Cape. • A targeted passive acoustic monitoring program to detect southbound migratory pygmy blue whales ran from late October 2021 to March 2022 with a deepwater acoustic long-term observatory lander (900 m depth) 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 locations, pygmy blue whale song vocalisations and D-calls were detected from the start of the recording period through November and early December 2021. • An offshore trial of distributed acoustic sensing 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 (start of the trial) through to mid-December 2023 and a couple of detections in early January 2024. The first satellite tracks of pygmy blue whales for this population documented northbound migration between WA 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 SA in 2015 showed most of the tagged whales remained in SA waters during the tracking period, but one documented the migration to Indonesia via WA waters and a return journey (albeit via intermittent data) of the southbound migration to the southern coast of WA (Möller *et al.* 2020). Thums *et al*. (2022) used passive acoustic monitoring and satellite telemetry data (a combination of existing data and tag tracking data collected for WA between 2019 and 2022) to assess the spatial extent of the distribution, migration and foraging areas for pygmy blue whales in the south-east Indian Ocean associated with the northbound migration. The tag tracking results highlighted extensive use of slope habitat off WA and minimal use of shelf habitat by pygmy blue whales. Additionally, pygmy blue whales off WA 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 and June and November and 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 while 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

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Species	Key information
	from SA through WA 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 WA towards Heard and McDonalds islands, covering almost 6,000 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). More recent tagging data from Thums *et al.* (2025) observed one whale travelling southwards rather than northwards to forage off the shelf edge in Bremer Bay in an area where another pygmy blue whales were observed to be foraging. This highlights that not all pygmy blue whales migrate northward each year. More recent combined satellite tracking and dive behaviour data provide evidence about the timing and location of pygmy blue whales foraging along their migration pathway (Thums *et al.* 2025). This study showed pygmy blue whales forage intermittently during migration, with foraging and lunge feeding occurring every one to ten days (Thums *et al.* 2025). Foraging behaviour was confirmed in several areas along WA, including Perth Canyon to offshore Jurien Bay, the shelf edge near Geraldton and the Abrolhos region, offshore Ningaloo to the Montebello Islands, and in smaller areas near Shark Bay, offshore Bremer Bay and in the Savu Sea (Indonesian waters). Opportunistic foraging also occurred in offshore waters between these areas during long-distance migration (Thums *et al.* 2025). In southern WA, foraging and lunge feeding dives were typically in deeper waters (>300 m), associated with slower horizontal movement and predominantly foraged during daylight hours. In contrast, whales foraging off Ningaloo, the Kimberley and in Indonesian waters exhibited shallower dives (about 100 m), faster travel rates, and weaker or absent diel patterns, consistent with more opportunistic feeding (Thums *et al.* 2025). 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 East Indian Ocean pygmy blue whale for WA. McCauley and Jenner (2010) calculated the population to be between 662 and 1,559 individuals in 2004 based on passive acoustics (whale vocalisations), and Jenner *et al.* (2008) (based on photographic mark and recapture) calculated between 712 and 1,754 individuals. Neither estimates accounted for animals travelling further west into the Indian Ocean (McCauley *et al.* 2018). More recent passive acoustic data estimate a 4.3% growth rate that applies to the proportion of East Indian Ocean pygmy blue whales seasonally present in offshore water off south-eastern Australia and may not reflect the full population but does imply an increase (McCauley *et al.* 2018). Thums *et al.* (2022) identified the most important foraging (and resting or 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 about 25ºS; and (4) the Banda Sea. The foraging BIA off the south-west of WA encompassed 83% of the most important areas in that region (Thums *et al.* 2022). Thums *et al.* (2025) validated these areas using direct dive data and further showed that additional, smaller and more opportunistic foraging areas can occur outside designated BIAs, particularly during migration. The pygmy blue whale is typically 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 to 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). Table 10-1 presents the seasonal presence of pygmy blue whales. Table 8-3 and Figure 8-4 present 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.

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Species	Key information
Bryde's whale	The Bryde's whale is the least migratory of its genus and is restricted geographically from the equator to about 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 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 suggest offshore whales migrate seasonally, heading towards warmer tropical waters during the winter, but 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). There are no identified BIAs for this species in the NWMR.
Southern right whale	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 (<10 m depth) within 1 km of the coastline (Charlton *et al.* 2019; Smith *et al.* 2022a, 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). Recent long-term monitoring data indicated more than 95% of southern right whales using key calving areas were also found to occur within 1 km of the shore, typically in shallow sheltered environments, such as Head Bight, Fowlers Bay and Encounter Bay in SA (O'Shannessy *et al.* 2025). For the western population, breeding occurs in Exmouth Gulf and in calving areas along the south coast of WA outside of the NWMR (DCCEEW 2024a). A stranding record exists for the far north Kimberley coast (Atlas of Living Australia 2006). Known females have rarely been observed on the Australian coastline in the year before 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 (last trimester) and calf growth rate has been found to depend on the maternal body size and condition of the mother (Christiansen *et al.* 2018 and Christiansen *et al.* 2022, 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 an increase in 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 (>20%) (DCCEEW 2024a). Long-term monitoring data from SA indicate population growth has slowed since around 2016, with average annual increases estimated at 3.34% for all individuals and 3.93% for cow–calf pairs. These rates are lower than those recorded in earlier decades (O'Shannessy *et al.* 2025). Abundance and reproductive success in southern right whales are primarily tied to foraging success and body condition, with southern right whales relying on stored energy reserves for reproductive success. A recent study identified declining reproductive performance in the WA southern right whale population, with calving intervals increasing from 3.4 to 4.1 years since, with sustained longer breeding intervals evident since 2015 (*Charlton et al*. 2026). This reproductive decline is associated with climate-driven trophic changes in key southern right whale offshore foraging areas. Since 2013, reduced Antarctic sea ice in high-latitude habitats has altered ecosystem structure and krill-based food webs, while mid-latitude regions have experienced warming, declining chlorophyll-a, and reduced prey availability since 2010 (Charlton *et al.* 2026). Calving intervals began increasing around 2010, with significant population-level shifts evident by 2015. This trend corresponds with a decline in the western population's growth rate from about 2016 onward (Charlton *et al.* 2026). There are a reproduction BIA and habitat critical to survival for the southern right whale within Exmouth Gulf (DCCEEW 2024a). A migration BIA extends 3 nm out from the coastline from Ningaloo and spans down the WA coastline and across the south and south-east coast of Australia (DCCEEW 2024a). Nursing and calving behaviours are known to occur within reproductive BIAs. Habitat critical to survival for the southern right whale has been identified as all reproductive BIAs across the species range (DCCEEW 2024a). See Figure 8-1 and Section 8.2.3 for habitat critical to survival for southern right whales in the NWMR. See Table 8-3 and Figure 8-5 for BIAs for southern right whales in the NWMR

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Species	Key information
Antarctic minke whale	The Antarctic minke whale has 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 (see the DCCEEW 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 the Antarctic minke whale migrates through offshore waters of WA 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 2011b), 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). There are no identified BIAs for this species in the NWMR.
Sei whale	The sei whale is a baleen whale with a worldwide oceanic distribution, 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 prefers 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). There are no known mating or calving areas in Australian waters, and no identified BIAs for this species in the NWMR.
Fin whale	The fin whale is a large baleen whale distributed worldwide. Fin whales migrate annually between high latitude summer feeding grounds and lower latitude overwintering 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 ten individuals, as well as in pairs and alone (Threatened Species Scientific Committee 2015c). Accurate distribution patterns are not known within Australian waters and most data are from stranding events. 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, but 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). There are no identified BIAs for this species in the NWMR.
Omura's whale	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, but 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). It was believed the range of Omura's whale was restricted to the eastern Indo-Pacific, but 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 by Cerchio *et al.* (2019) concluded Omura's whale can primarily be found in tropical and warm-temperate waters and is currently known from all

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Species	Key information
	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, most of which were on the continental shelf and within shallow seas throughout the documented range (Cerchio *et al.* 2019). Passive acoustic monitoring indicates Omura's whales are present across multiple regions of northern Australian waters, with vocal detections extending from northwest Australia (Timor Sea, Kimberley, Pilbara and Gascoyne) to the Great Barrier Reef. Vocalisations were recorded repeatedly over extended periods (hours), indicating extended vocal activity and consistent species presence within the monitoring locations (Browne *et al.* 2025). While detections occurred across all surveyed regions, differences in call occurrence were observed (Browne *et al*. 2025). The 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 acoustic long-term observatory 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 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 whale present primarily in December, but this lander malfunctioned and stopped recording in mid-January 2022. An offshore trial of distributed acoustic sensing using fibre optic cables (submarine telecommunications cable) to detect low-frequency whales recorded vocalising Omura's whales within a 12 km detection range along a 50 km long area on the outer edge of the NWS (Debens *et al.* 2024). Omura's whale detections were made from the beginning of December 2023 through to mid-January 2024 (and the end of the trial). 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.
Toothed whales (Odontoceti) – high frequency hearing	
Sperm whale	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, but they are usually found in deep offshore waters, with more dense populations near 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, males may migrate through the region, and the species may be associated with canyon habitats (Ceccarelli *et al.* 2011).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 during the North West Cape multi-client 3D 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 about 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). 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 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 before 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. Sperm whales produce foraging sounds during deep dives, but their echolocation clicks have much lower peak frequencies (about 15 kHz) than the detection bandwidth that high-frequency acoustic monitoring systems use on the NWS. As a result, sperm whales are unlikely to be detected by recorders, despite being one of several deep-diving toothed whale species that regularly forages in the region (Madhusudhana *et al.* 2026).

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Species	Key information
	There are no identified BIAs for this species in the NWMR.
Orca (killer whale)	The preferred habitat of killer whales (*Orcinus orca*) 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, but have been observed along the continental slope and shelf, particularly near seal colonies, and 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, but the total number of mature animals within waters around the continent may be 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. There is thought to be at least three distinct groups of killer whales in Australian waters, with key groups in the South-east Marine Region, the SWMR and NWMR. These groups appear to vary depending on broader tropical and temperate environmental conditions that influence prey choices, habitat preferences and phenotypic traits (Hutchings *et al.* 2025). Recent species distribution modelling of killer whales in Australian waters has provided a large-scale assessment of potential habitat suitability of these regional populations. The modelling identified areas of higher habitat suitability in WA, including nearshore and reef-associated waters of the Ningaloo Reef region during the astral winter, and in the SWMR during February and March, consistent with sighting records. Suitable habitat in the NWMR was concentrated in nearshore and reef environments, particularly along Ningaloo Reef, extending north to offshore reefs and islands in the Kimberley, and southwards along the coast to Carnarvon and Geraldton. These areas are characterised by oceanographic conditions and enhanced productivity that support prey aggregations, including migratory baleen whales, which killer whales are known to target in the region. Environmental predictors demonstrated clear ecological differentiation between killer whale groups, with the northwest population showing a preference for warm tropical waters in contrast to temperate-associated groups in southern regions (Hutchings *et al.* 2025). Killer whales are top-level carnivores. 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 target humpback whales, particularly calves, off Ningaloo Reef during the humpback southern migration season (Pitman *et al.* 2015). Overall, observations suggest 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. There are also records of killer whales attacking dugongs in Shark Bay (Anderson and Prince 1985). However, attacks appear opportunistic as there are no recognised key localities or important habitats for killer whales within the NWMR (DSEWPaC 2012a). There are no identified BIAs for this species in the NWMR.
Australian snubfin dolphin	Stranding and museum specimen records indicate Australian snubfin dolphins occur only in waters off northern Australia, from around Broome on the west coast to the Brisbane River on the east coast (Parra *et al.* 2002). Aerial and boat-based surveys indicate Australian snubfin dolphins occur mostly in protected shallow waters near the coast, and near 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 2008a). 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, 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 WA (Bouchet *et al.* 2021) and documented that snubfin dolphins are consistently encountered in shallow water (<21 m depth) near (<15 km) freshwater inputs, with high detection rates in known hotspots such as Roebuck Bay and Cygnet Bay and suitable coastal habitat in the wider Kimberley region. Table 8-3 and Figure 8-6 present the location and type of BIAs for Australian snubfin dolphins in the NWMR.

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Species	Key information
Indo-Pacific humpback dolphin (Australian humpback dolphin)	Previously included with *Sousa chinensis*, the Australian humpback dolphin (*S. sahulensis*) was elevated to a species in 2014. *S. chinensis* is now applied for humpback dolphins in the eastern Indian and western Pacific oceans and *S. sahulensis* 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 *S. chinensis* under the EPBC Act. 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 to the south-west to Shark Bay (Hanf *et al.* 2016). Allen *et al.* (2012) suggested humpback dolphins use a range of inshore habitats, including 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 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 about 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, the North West Cape has been identified as an important habitat at the southwestern limit of this species' range (Hunt *et al.* 2017). Additionally, Brown *et al.* (2014) reported evidence of hybridisation between the Australian snubfin and humpback dolphin populations in north-western Australia. Aerial line-transect surveys across the Pilbara between 2015 and 2017 produced modelled abundance estimates for Australian humpback dolphins of 1,546 (2016) and 2,690 (2017) (Raudino *et al.* 2023). Densities were highest in nearshore waters, with hotspots in Exmouth Gulf, Dampier Archipelago and the Great Sandy Islands. However, aerial surveys targeting other marine species over the western Pilbara have recorded humpback dolphins more than 50 km from the mainland in shallow shelf waters (<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). 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). Table 8-3 and Figure 8-7 provide the location and type of BIAs for Australian humpback dolphins in the NWMR.
Indo-Pacific bottlenose dolphin (spotted bottlenose dolphin)	There are four known subpopulations 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 and breeding areas include the shallow coastal waters and estuaries along the Kimberley coast and Roebuck Bay. A study at North West Cape found spotted bottlenose dolphins were more likely to occur in coastal lagoons west of North West Cape during winter months than other seasons. In spring, the probability of occurrence was higher outside of the Ningaloo Marine Park, although summer data was not included in this study (Haughey *et al.* 2021). Aerial transect surveys in the Kimberley region showed the abundance for bottlenose dolphins has been declining, with estimated abundance of 3,713 individuals in 2015, 2,638 in 2016 and 1,635 in 2017. Spotted bottlenose dolphins off North West Cape exhibit a highly fluid spatial and temporal structure, characterised by loose, non-random associations with low temporal stability and frequent turnover of individuals. The absence of distinct social clusters indicates an open, fission–fusion population, with space use and associations varying over short timeframes rather than reflecting stable, long-term groupings (Edwards *et al.* 2025). Spatial data collected in Ningaloo Marine Park between 2013 and 2019 showed the distribution of foraging groups was related to distance from the nearest boat ramp and seabed slope, with the foraging dolphins more likely to occur 3,000 to 5,000 m from the nearest boat ramp and in areas of moderate seabed slope. Resting dolphins were localised and most likely to occur in shallow waters (5 to 10 m deep) within designated Sanctuary Zones of the Ningaloo Marine Park. Dolphins travelling were more likely to occur 1,000 to 2,000 m from the coast and in water depths of 7 to 12 m, but were observed to reach depths of 20 m (Haughey *et al.* 2025). Table 8-3 and Figure 8-8 provide the location and type of BIAs for spotted bottlenose dolphins in the NWMR.

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8.2.2 Dugongs

The dugong is listed as migratory under the EPBC Act (DSEWPaC 2012a).

Seagrass meadows in coastal waters, estuarine creeks and streams within and adjacent to the NWMR support significant populations of dugongs, including Shark Bay, Exmouth Gulf, Ningaloo Reef, Broome and the Kimberley coast, as well as offshore seagrass meadows at Ashmore Reef (DSEWPaC 2012a). Dugongs are distributed along the WA coast throughout the Gascoyne, Pilbara and Kimberley regions. Specific areas supporting dugong populations include Shark Bay, Ningaloo Reef, Exmouth Gulf, the Pilbara coast (Exmouth Gulf to De Grey River [Marsh *et al.* 2002]), 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). Even areas with sparse seagrass coverage (e.g. 2 to 10% in the Pilbara) can serve as a key driver of dugong presence and abundance (Said *et al.* 2025).

Dugongs are highly migratory and have been observed moving large distances (DSEWPaC 2012a). Although the patterns of dugong movement in WA are not well understood, it is suggested dugong movements are influenced by water temperatures (Holley *et al.* 2006; Marsh *et al.* 2011) and the availability of seagrass foraging habitats (Marsh *et al.* 1994; Preen *et al.* 1997; Said *et al.* 2025). Dugongs are typically associated with shallow waters (<100 m), which support the growth of subtropical and tropical seagrass meadows (Marsh *et al.* 2025). 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).

Cleguer and Marsh (2023) present the most contemporary data for dugongs and population estimates via an inventory of dugong aerial surveys of Australia, including north-west Australia (Shark Bay, Ningaloo, Exmouth Gulf and Pilbara, the Kimberley region). The first standardised dugong aerial abundance surveys in Australia were conducted in the early 1980s. In regions including Shark Bay and the Ningaloo-Exmouth area, repeated surveys over several decades provide long-term datasets that suggest dugong populations are relatively stable or fluctuate over time, rather than showing clear long-term declines. In contrast, the Kimberley region has only been comprehensively surveyed in 2015 and 2017, meaning only baseline information is currently available for that region, and long-term population trends cannot yet be assessed (Cleguer and Marsh 2023).

There are BIAs for dugongs within and adjacent to waters of the NWMR (refer Section 7.2.3). Table 8-3 and Figure 8-9 provide the location and type of BIAs for dugongs in the NWMR.

8.2.3 Pinnipeds

The Australian sea lion is listed as a species that may occur or may have habitat within the NWMR (Appendix A).

The Australian sea lion's breeding range is only in SA and WA waters in the SWMR, extending from the Houtman Abrolhos Islands in WA to The Pages Islands, east of Kangaroo Island, in SA (DSEWPaC 2013a). The Australian sea lion is the only pinniped endemic to Australia (Strahan 1983) and has also been recorded within the southern extent of the NWMR in Shark Bay, WA (Kirkwood *et al.* 1992). All known breeding colonies occurring in WA and SA are considered as habitat critical to the survival of the species under the Recovery Plan for the Australian Sea Lion (DSEWPaC 2013a), noting subsequent work by Goldsworthy *et al.* (2021) has identified additional breeding sites, reflecting updated knowledge since 2013. Of these breeding sites, four are in the SWMR along the west coast of WA, including the Houtman Abrolhos Islands (Easter Group), Beagle Island, North Fisherman Island and Buller Island. There are also foraging BIAs for males and females along the west coast, extending from the Abrolhos Islands south to Rockingham. 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 2020). This means breeding periods (copulation and birthing) differ between colonies and can occur at various times of the year. The birth interval in Australian sea lions is about 17 to 18 months, and breeding seasons are protracted, lasting between four and nine months (Threatened Species Scientific Committee 2020).

The Australian sea lion is a specialised benthic forager, feeding primarily on the sea floor. Studies have shown 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 2020). The Australian sea lion forages predominantly on the continental shelf, with most dives occurring in

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depths of 20 to 100 m. Individuals typically travel up to about 60 km from their colony on each foraging trip, with a maximum distance of around 190 km from their colony over shelf waters.

The Australian sea lion is a member of the Otariidae (eared seals) family. It was listed as endangered in 2020 (Threatened Species Scientific Committee 2020). 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 the species meets IUCN endangered criteria.

There is no designated habitat critical to survival or identified BIAs for the Australian sea lion in the NWMR.

8.2.4 Habitat critical to survival for marine mammals

The southern right whale is the only marine mammal that has habitat critical to survival of a species defined.

The National Recovery Plan for the Southern Right Whale (DCCEEW 2024a) identifies habitat critical to survival under the EPBC Act.

Habitat critical to survival for the southern right whale has been identified as all reproductive BIAs across the southern right whale range (Figure 8-1). The identification of habitat critical to survival reflects that southern right whales display strong site fidelity to calving areas in Australian coastal waters, within and between years, over decades (Bannister 2001; Charlton *et al.* 2021; Watson *et al.* 2021, cited in DCCEEW 2024a). Reproductive areas have been identified as habitat critical to survival for the species because:

- they meet the species' essential life cycle requirements for reproduction, such as mating, calving and 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. 'Critical Habitat' is different from habitat critical to survival and only applies to Commonwealth land and sea. There are also no important cetacean habitat areas identified in the Australian Whale Sanctuary as defined under section 228A of the EPBC Act for southern right whales (DCCEEW 2024a).

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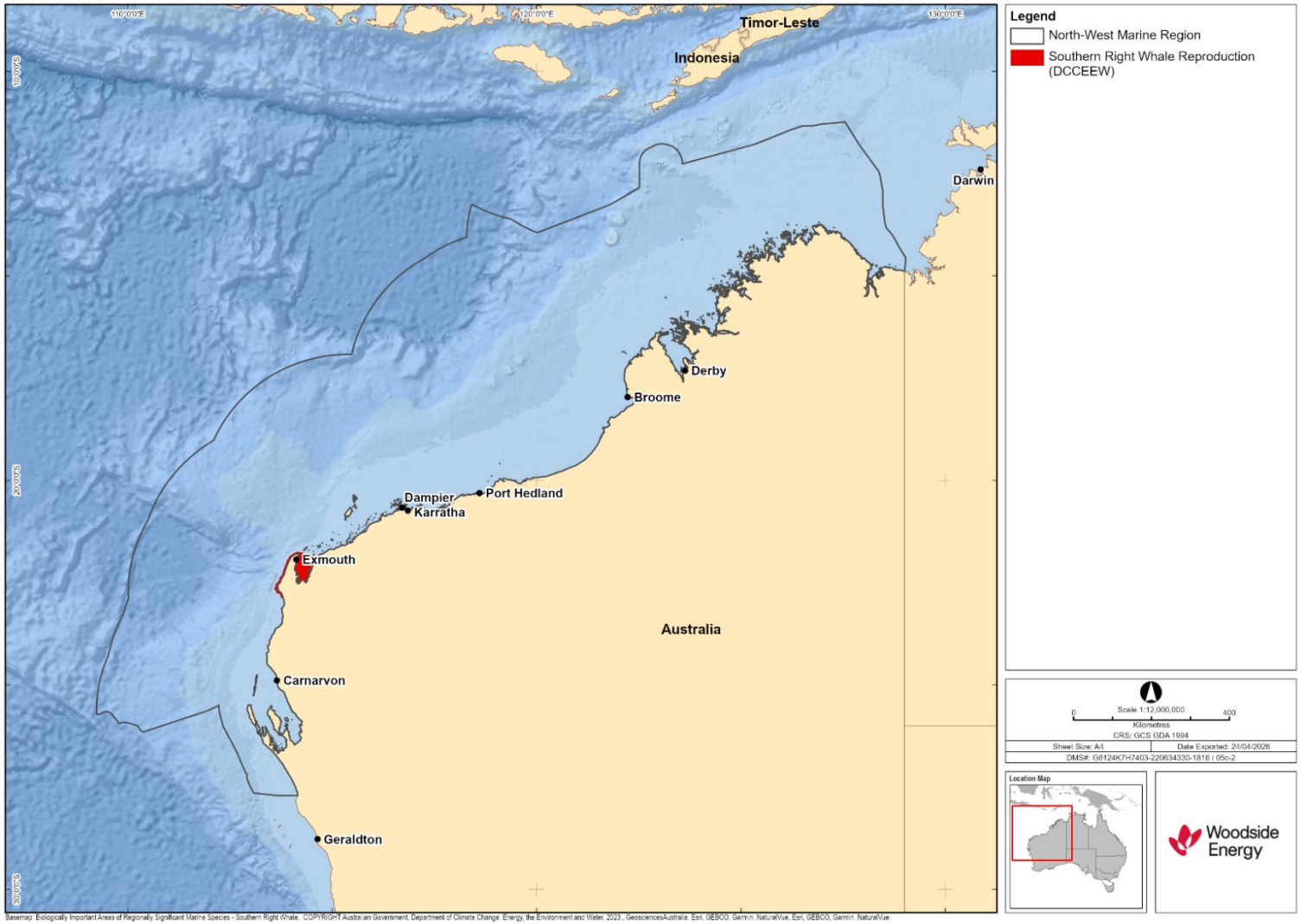


Figure 8-1: Habitat critical to the survival for the southern right whale in the NWMR

Source: DCCEEW (2024a)

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8.2.5 Marine mammal biologically important areas

A review of the Australian Marine Spatial Information System (Geoscience Australia 2026) identified BIAs representing important life cycle stages and behaviours for six species of marine mammals in the NWMR, presented in Table 8-3:

- Australian snubfin dolphin
- Indo-Pacific humpback dolphin (Australian humpback dolphin)
- Indo-Pacific/Indian Ocean spotted bottlenose dolphin
- dugong
- humpback whale
- pygmy blue whale, blue whale
- southern right whale.

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Table 8-3: Marine mammal BIAs within the NWMR

Species	Woodside activity area			BIAs				
	Browse	*NWS/ Scarborough*	*North West Cape*	*Resting*	*Foraging*[12]	*Reproduction*		*Migration*
						Breeding	*Calving*	
Australian snubfin dolphin	✓	✓	-	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 Carnot and Eagle Bay King Sound (south) King Sound (north) Yampi Sound Talbot Bay Maret Islands Bigge Island Admiralty Gulf Parry Harbour Pender Bay Bougainville Peninsula Vansittart Bay, Anjo Peninsula Napier Broome Bay, Deep Bay Port Nelson, York Sound, Prince Frederick Harbour Prince Regent River King George River Cape Londonderry Ord River Willie Creek	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 Port Nelson, York Sound, Prince Frederick Harbour Prince Regent River King George River Cape Londonderry Ord River Willie Creek	No migration BIA identified within the NWMR

[12] Includes areas defined as 'foraging', 'foraging likely' and 'foraging (high density prey) as per Australian Marine Spatial Information System (Geoscience Australia, 2026). These areas are shown in the BIA figures.

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Species	Woodside activity area			BIAs				
	Browse	NWS/ Scarborough	North West Cape	Resting	Foraging[12]	Reproduction		Migration
						Breeding	Calving	
Indo-Pacific humpback dolphin (Australian humpback dolphin)	✓	✓	-	No resting BIA identified within the NWMR	Roebuck Bay Willie Creek Admiralty Gulf Parry Harbour Camden Sound Area Carnot and Beagle Bay Prince Regent River Port Nelson, York Sound, Prince Frederick Harbour King Sound (south) King Sound (north) Maret Islands Bigge Island Bougainville Peninsula Pender Bay Vansittart Bay, Anjo Peninsula	Camden Sound Area Roebuck Bay Willie Creek Prince Regent River King Sound (north) Yampi Sound Talbot Bay	Biggie Island Camden Sound Area King Sound (north) Maret Island Port Nelson, York Sound, Prince Frederick Harbour Talbot Bay Roebuck Bay Willie Creek Prince Regent River Yampi Sound	No migration BIA identified within the NWMR
Indo-Pacific/ Indian Ocean spotted bottlenose dolphin	✓	✓	✓	No resting BIA identified within the NWMR	Roebuck Bay, Willie Bay Camden Sound area King Sound (south) King Sound (north) Pender Bay Yampi Sound	Roebuck Bay, Willie Bay King Sound (south) King Sound (north) Yampi Sound	Roebuck Bay, Willie Bay Camden Sound area King Sound (south) King Sound (north) Yampi Sound	Pender Bay

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Species	Woodside activity area			BIAs				
	Browse	*NWS/ Scarborough*	*North West Cape*	*Resting*	*Foraging*[12]	*Reproduction*		*Migration*
						Breeding	*Calving*	
Dugong	✓	✓	✓	No resting BIA identified within the NWMR	Ashmore Reef (April/May) Exmouth Gulf Middle Island Ningaloo Reef Pilbara and Kimberley coast Shark Bay Roebuck Bay Dampier Peninsula	Ashmore Reef – far west (April/May) Eastern side of Dirk Hartog Island (Shark Bay) May to September Exmouth Gulf and Ningaloo year-round	Ashmore Reef – far west (April/May) Exmouth Gulf year round	Within Shark Bay June to November Roebuck Bay year-round
Humpback whale	✓	✓	✓	Kimberley/Coastal North Lacepede Island, Camden Sound (winter) Exmouth Gulf (north migration – early June) (south migration – late Aug to Oct) Shark Bay	No foraging BIA identified within the NWMR	Nursing Kimberley coast from the Lacepede Islands to north of Camden Sound (mid-Aug to early Sep)	Core calving in waters off the Kimberley coast from the Lacepede Islands to north of Camden Sound (mid-Aug to early Sep)	The migration corridor extends from the coast to out to about 100 km offshore in the Kimberley region (arriving in June) extending south to North West Cape From North West Cape to south of Shark Bay the migration corridor reduces to about 50 km

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Species	Woodside activity area			BIAs				
	Browse	*NWS/ Scarborough*	*North West Cape*	*Resting*	*Foraging*[12]	*Reproduction*		*Migration*
						Breeding	*Calving*	
Pygmy blue whale, blue whale	✓	✓	✓	No resting BIA identified within the NWMR	Ningaloo 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 1,000 m; appear near Ningaloo Coast Montebello Islands area on southern migration (north: April to Aug; south: Oct to late Dec); potentially still present January (McCauley *et al.* 2018)
Southern right whale	-	-	✓	No resting BIA identified within the NWMR	No foraging BIA identified within the NWMR	Exmouth Gulf (May to September)	No calving BIA identified within the NWMR	Migration along Australian coastline between April to October extending up to the Exmouth Gulf breeding BIA

Source: Geoscience Australia (2026)

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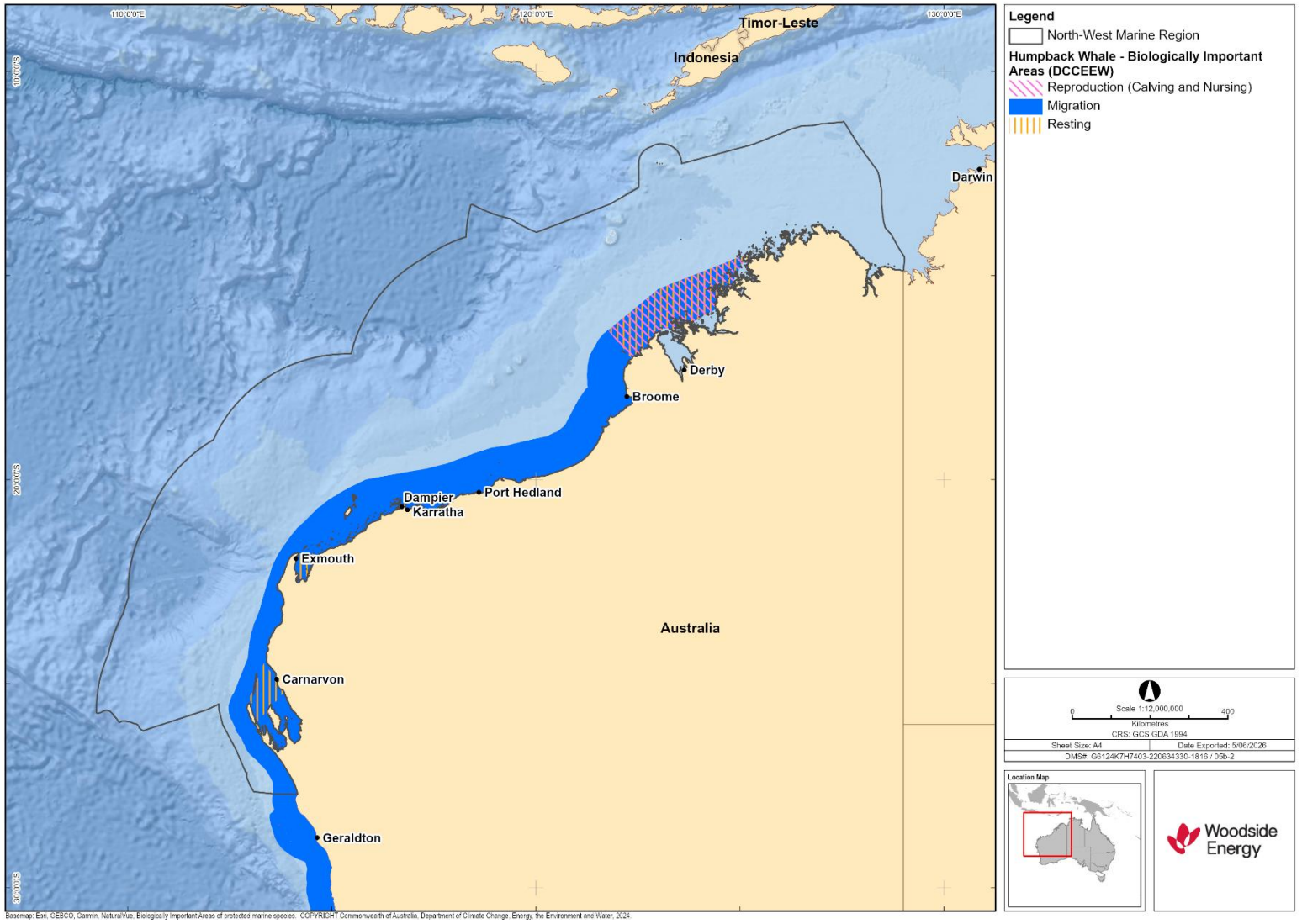


Figure 8-2: Humpback whale BIAs for the NWMR

Source: DCCEEW (2025b)

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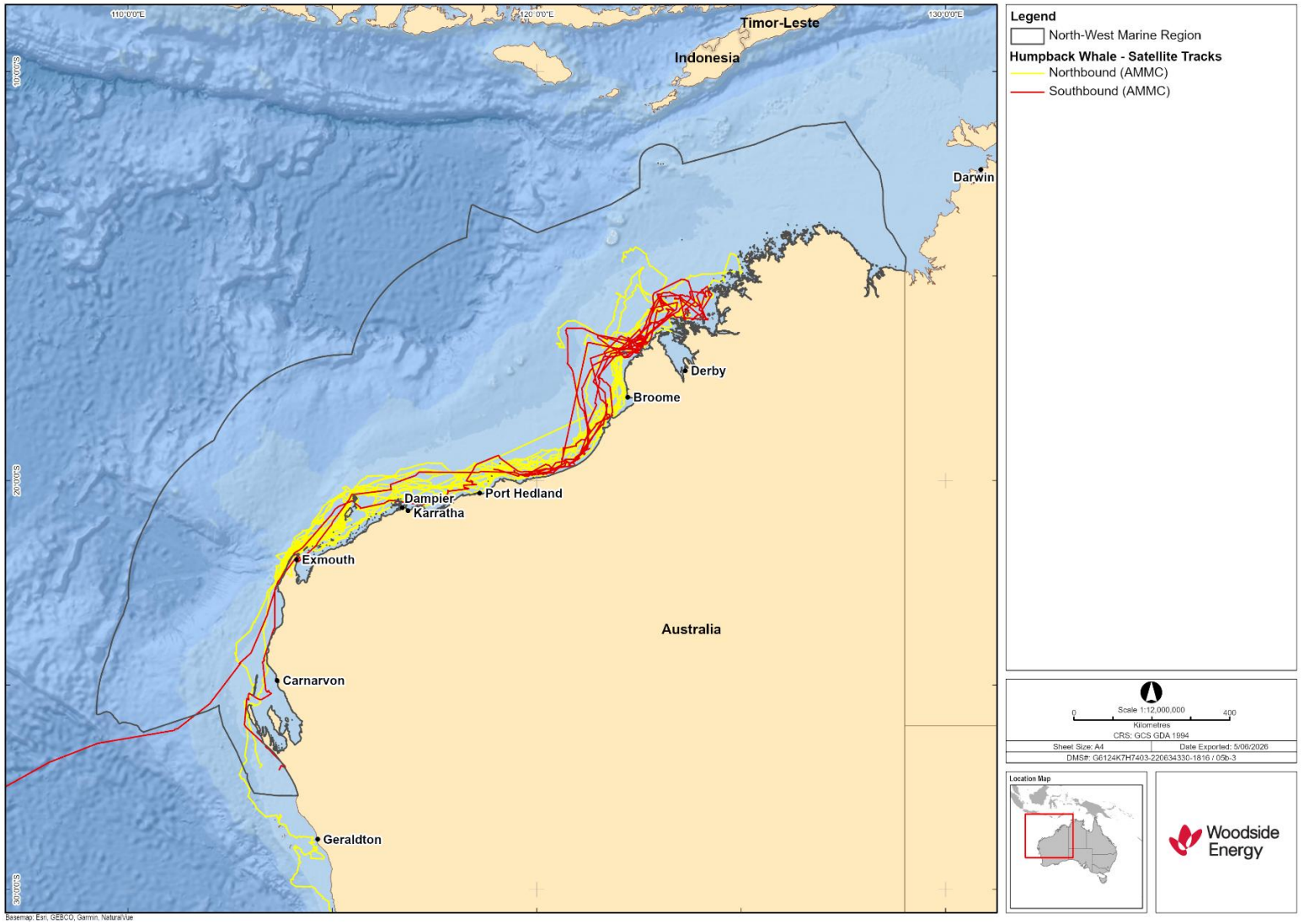


Figure 8-3: Humpback whale tagged tracks for northbound and southbound migrations

Source: Australian Marine Mammal Centre, as published in Double et al. (2010; 2012)

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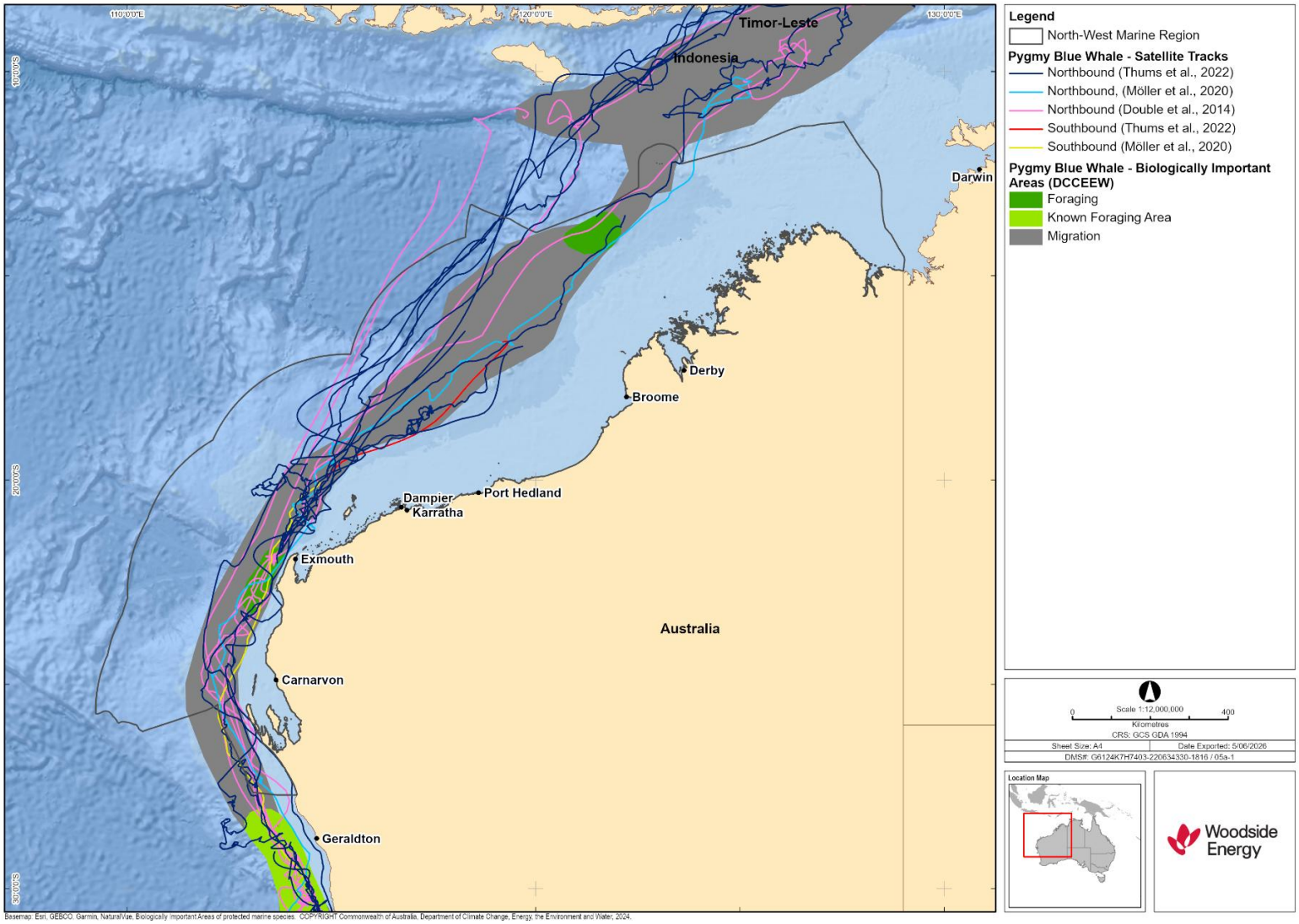


Figure 8-4: Pygmy blue whale BIAs for the NWMR and tagged whale tracks for northbound migration

Source for BIAs: DCCEEW (2025b)

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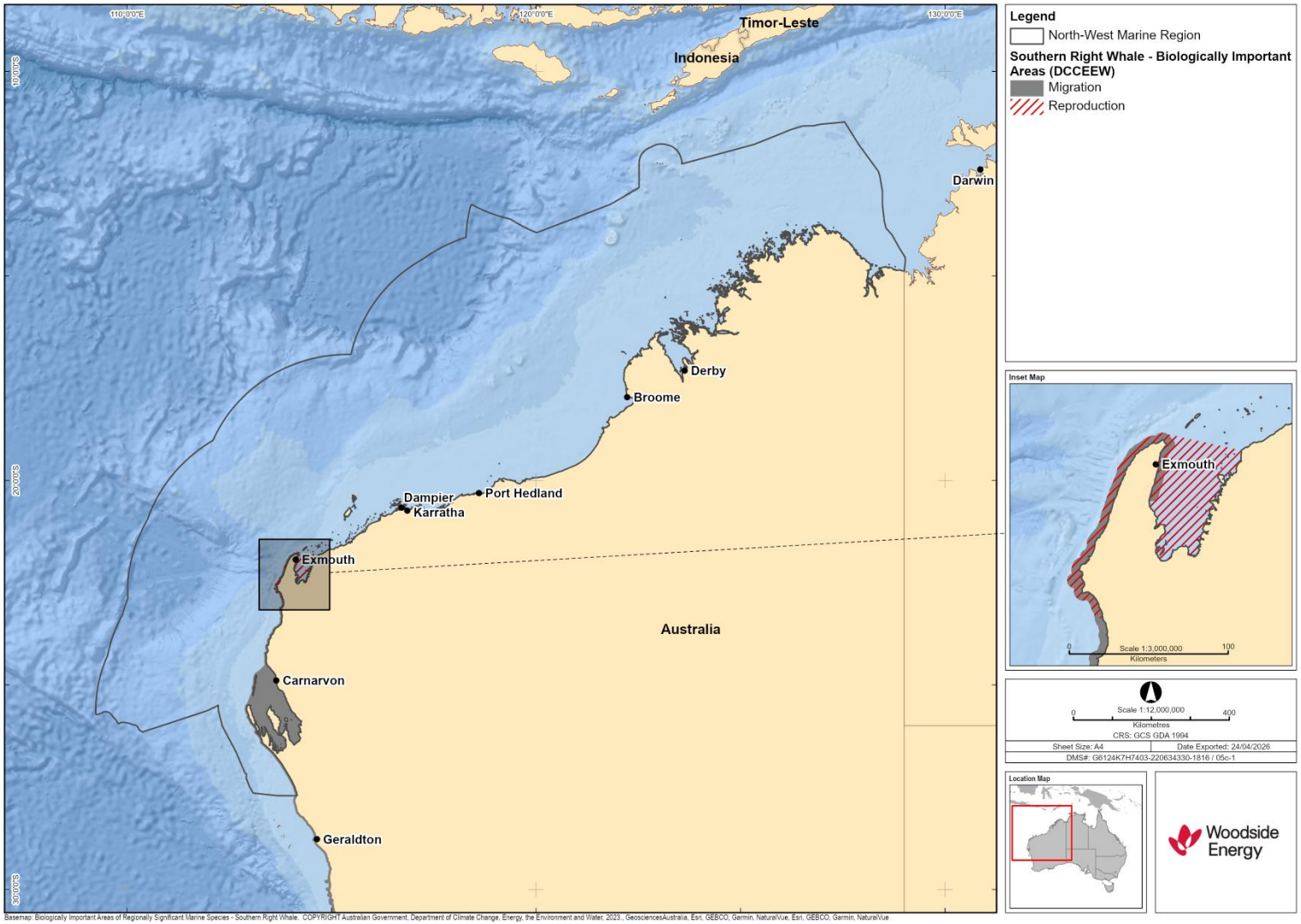


Figure 8-5: Southern right whale BIAs for the NWMR; migration and reproduction BIAs along the coast extend to 3 nm

Source: DCCEEW (2025b)

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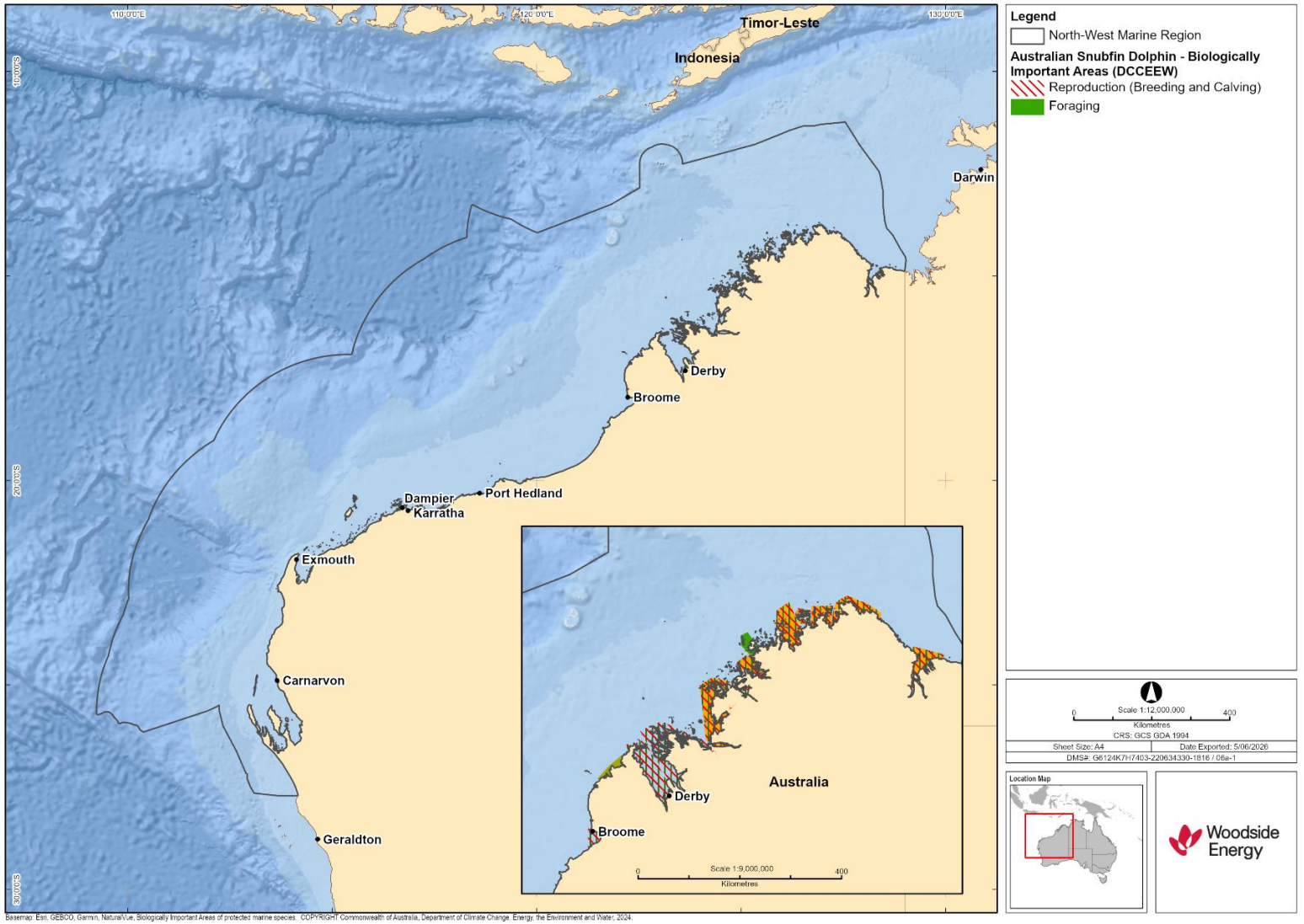


Figure 8-6: Australian snubfin dolphin BIAs for the NWMR

Source: DCCEEW (2025b)

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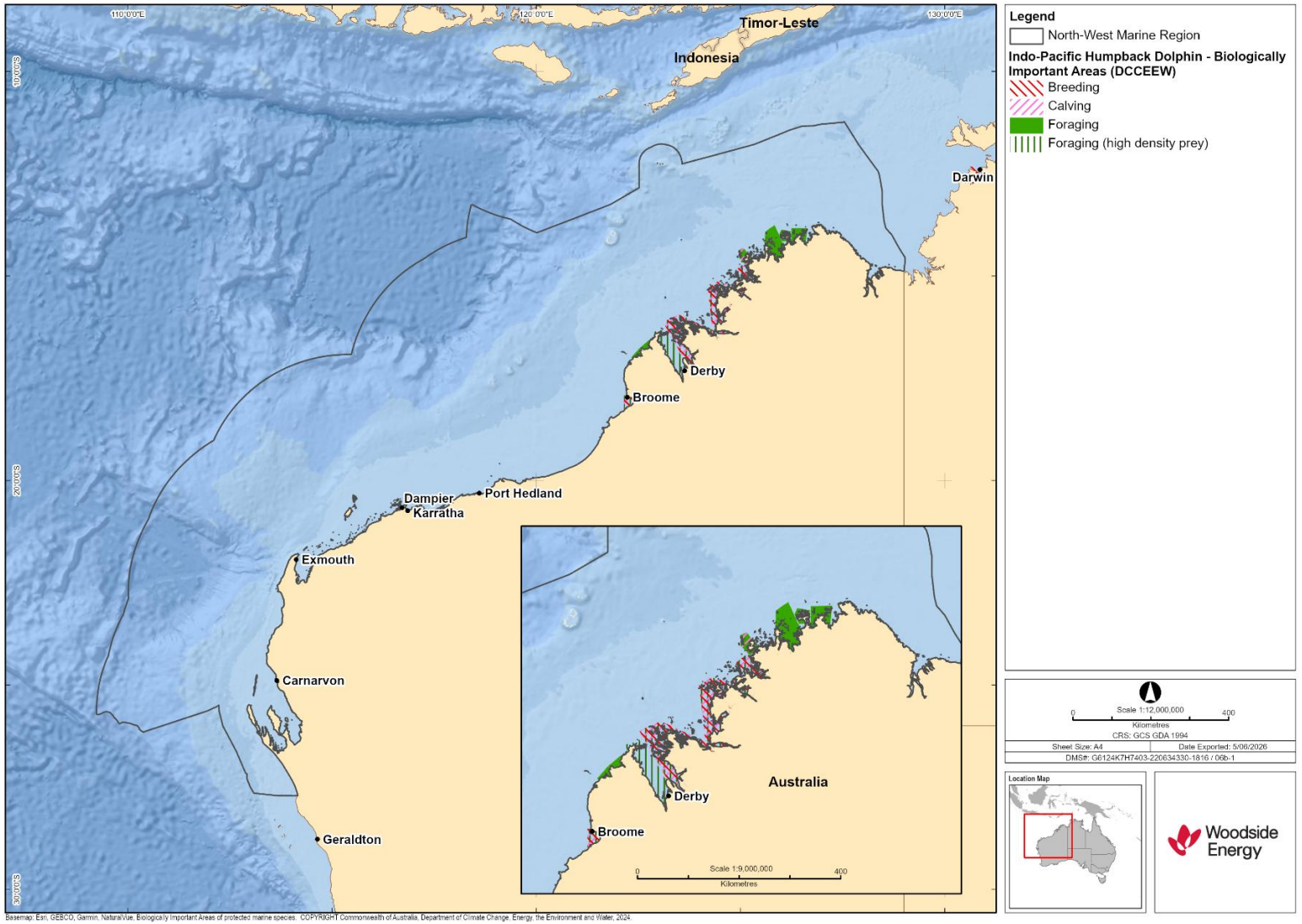


Figure 8-7: Indo-Pacific humpback dolphin BIAs for the NWMR

Source: DCCEEW (2025b)

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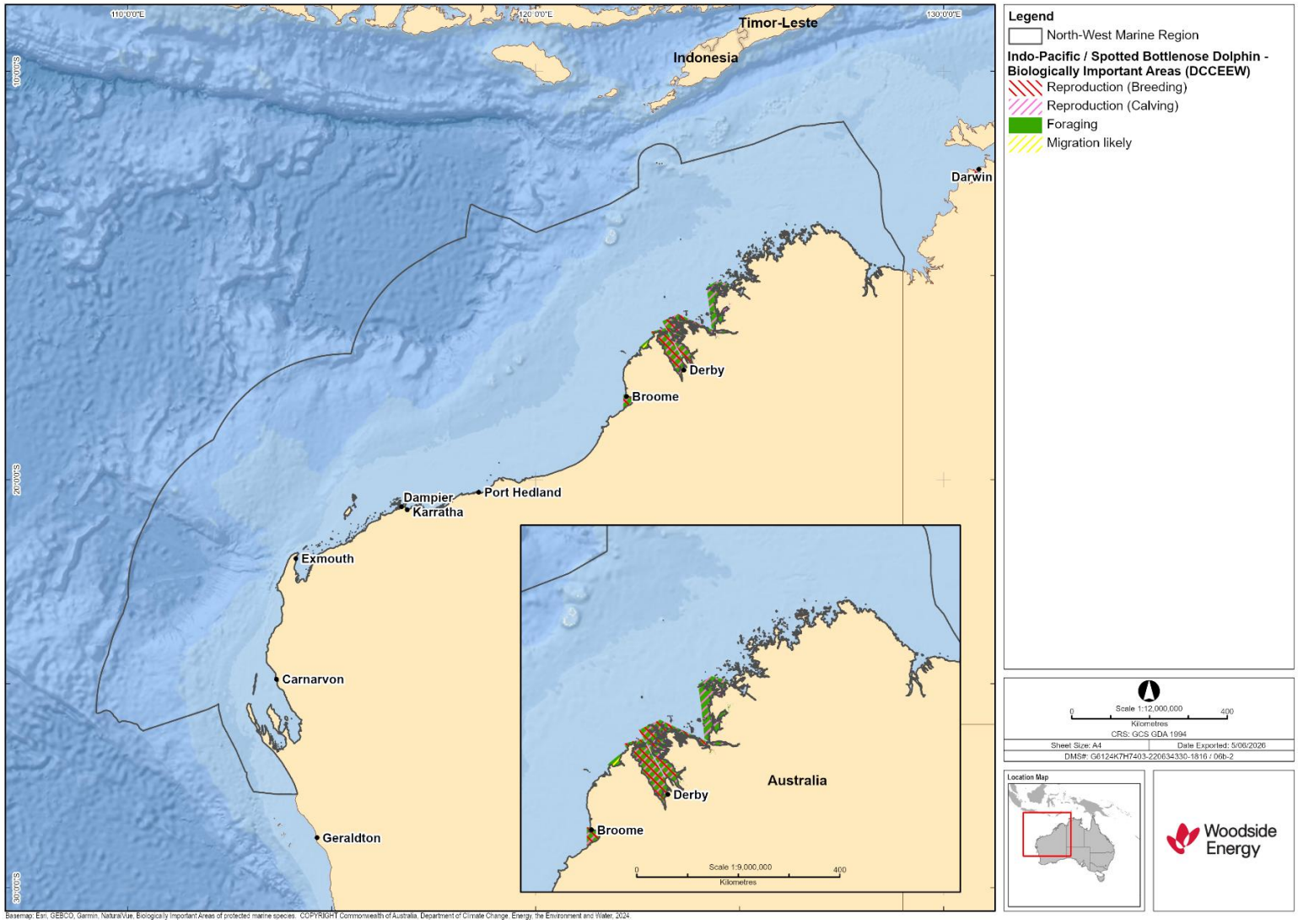


Figure 8-8: Indo-Pacific/Indian Ocean spotted bottlenose dolphin BIAs for the NWMR

Source: DCCEEW (2025b)

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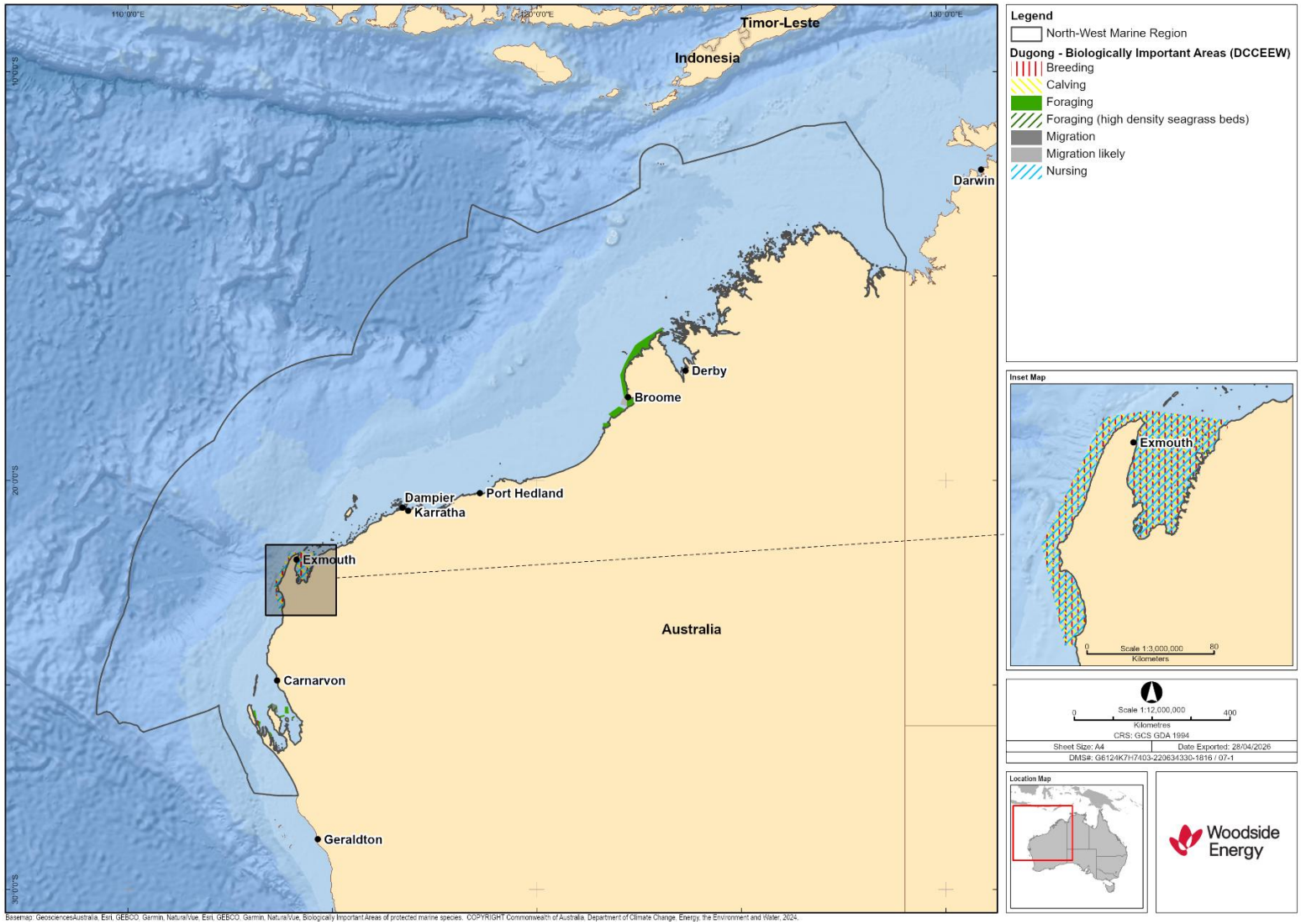


Figure 8-9: Dugong BIAs for the NWMR

Source: DCCEEW (2025b)

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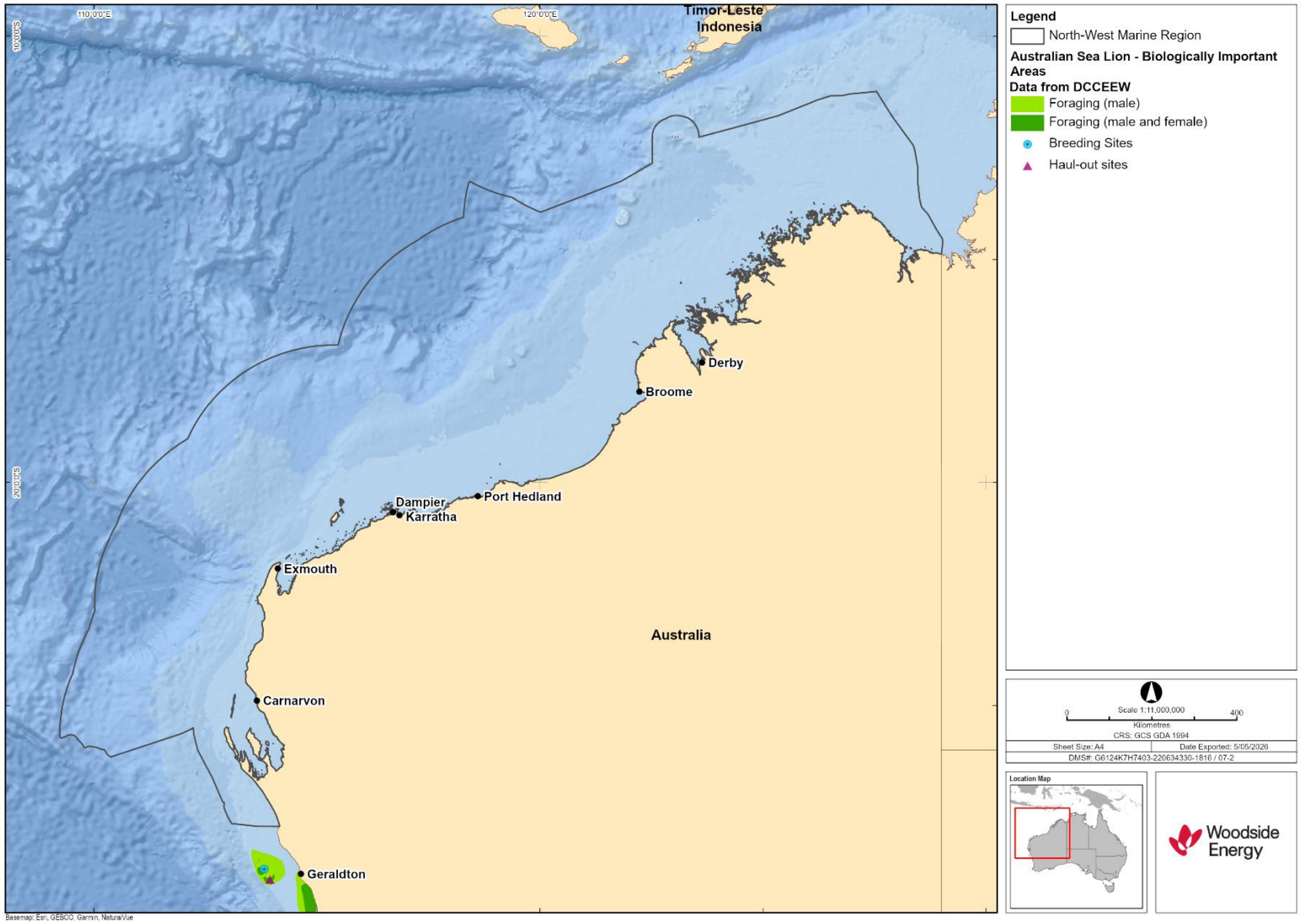


Figure 8-10: Australian sea lion BIAs in the northern extent of the SWMR closest to the NWMR

Source: DCCEEW (2024b)

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9. SEABIRDS AND MIGRATORY SHOREBIRDS OF THE NWMR

9.1 Regional context

The NWMR supports high numbers and species diversity of seabirds and migratory shorebirds, including many that are EPBC Act listed as threatened and migratory. The NWMR Marine Bioregional Plan reported 34 seabird species (listed as threatened, migratory 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 (Worley 2024). The high and moderate occurrence species for the NWMR were informed from this report and 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 9-1 includes those considered key species, with high or moderate occurrence (Worley 2024), and listed threatened or migratory under the EPBC Act, with a total of 63 key species identified within the NWMR, comprising 27 seabirds, 34 shorebirds and two other marine birds.

The PMST report identified a total of nine EPBC Act listed threatened or migratory bird species within the NMR. An additional 15 EPBC Act listed marine bird species that do not have a threatened or migratory status were recorded within the NMR. Appendix A provides a full list.

The PMST report identified a total of 46 EPBC Act listed threatened or migratory bird species within the SWMR. Appendix A provides a full list.

Many migratory seabirds and shorebirds are protected through bilateral agreements between Australia and Japan, China and the Republic of Korea, 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 for the NWMR, which are also recognised as global key biodiversity areas (KBAs) (BirdLife Australia[13]), 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 9-1 lists 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 conservation advice.

[13] https://www.birdlife.org.au/projects/KBA#:~:text=The%20Key%20Biodiversity%20Areas%20(KBAs,of%20advocacy%20for%20protected%20areas [Accessed 19 May 2026]

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Table 9-1: 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	EPBC Act (Commonwealth) (as per PMST report Appendix A)			BC Act (WA)[14]	IUCN Red List (non-statutory)[15]	EPBC Act Part 13 statutory instrument
		Threatened status	***Migratory status***	***Listed***	***Conservation status***	***Global status***	
Seabirds							
Diomedea amsterdamensis	Amsterdam albatross	Endangered	Migratory	Marine	Critically Endangered	Endangered	National Recovery Plan for albatrosses and petrels (DCCEEW 2022) EPBC Act Threat Abatement Plan for the incidental catch (or bycatch) of seabirds during oceanic longline fishing operations (Commonwealth of Australia 2018).
Sternula nereis nereis	Australian fairy tern	Vulnerable	N/A	N/A	Vulnerable	Vulnerable	National Recovery Plan for the Australian Fairy Tern *Sternula nereis nereis* (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)
Anous tenuirostris melanops	Australian lesser noddy	Vulnerable	N/A	Marine	Endangered	Least Concern	Conservation Advice *Anous tenuirostris melanops* 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 ha (DEWHA 2009)
Pterodroma mollis	Soft-plumaged petrel	Vulnerable	N/A	Marine	N/A	Least Concern	Conservation Advice *Pterodroma mollis* soft-plumaged petrel (Threatened Species Scientific Committee 2015f)
Sternula albifrons	Little tern	Vulnerable	Migratory	Marine	Migratory	Least Concern	Conservation Advice for *Sternula albifrons* (little tern) (DCCEEW 2025c)

[14] Threatened and Priority Fauna List – July 2025 - https://www.dbca.wa.gov.au/management/threatened-species-and-communities (accessed on 21/05/2026).
[15] IUCN, 2026. The IUCN Red List of Threatened Species. Version 2025-2. https://www.iucnredlist.org (accessed on 21/05/2026).

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Species name	Common name	EPBC Act (Commonwealth) (as per PMST report Appendix A)			BC Act (WA)[14]	IUCN Red List (non-statutory)[15]	EPBC Act Part 13 statutory instrument
		Threatened status	***Migratory status***	***Listed***	***Conservation status***	***Global status***	
Onychoprion fuscatus	Sooty tern	N/A	N/A	N/A	N/A	Least Concern	EPBC Act Threat Abatement Plan to reduce the impacts of exotic rodents on biodiversity on Australian offshore islands of less than 100,000 ha (DEWHA 2009)
Sula dactylatra	Masked booby	N/A	Migratory	Marine	Migratory	Least Concern	
Ardenna pacifica	Wedge-tailed shearwater	N/A	Migratory	Marine	Migratory	Least Concern	EPBC Act Threat Abatement Plan for the incidental catch (or bycatch) of seabirds during oceanic longline fishing operations (Commonwealth of Australia 2018). EPBC Act Threat Abatement Plan for predation by feral cats (DoE 2024) EPBC Act Threat Abatement Plan for predation by the European red fox (DEWHA 2008b) EPBC Act Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans (DoEE 2018)
Ardenna carneipes	Flesh-footed shearwater	N/A	Migratory	Marine	Vulnerable	Near Threatened	EPBC Act Threat Abatement Plan for the incidental catch (or bycatch) of seabirds during oceanic longline fishing operations (Commonwealth of Australia 2018). EPBC Act Threat Abatement Plan for predation by feral cats (DoE 2024) EPBC Act Threat Abatement Plan for predation by the European red fox (DEWHA 2008b) EPBC Act Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans (DoEE 2018) EPBC Act Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans (DoEE 2018)

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Species name	Common name	EPBC Act (Commonwealth) (as per PMST report Appendix A)			BC Act (WA)[14]	IUCN Red List (non-statutory)[15]	EPBC Act Part 13 statutory instrument
		Threatened status	***Migratory status***	***Listed***	***Conservation status***	***Global status***	
Sula leucogaster	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)
Oceanites oceanicus	Wilson's storm petrel	N/A	Migratory	Marine	Migratory	Least Concern	EPBC Act Threat Abatement Plan for predation by feral cats (DoE 2024) EPBC Act Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans (DoEE 2018) EPBC Act Threat Abatement Plan to reduce the impacts of exotic rodents on biodiversity on Australian offshore islands of less than 100,000 ha (DEWHA 2009)
Onychiprion anaethetus (listed as *Sterna anaethetus)*	Bridled tern	N/A	Migratory	Marine	Migratory	Least Concern	EPBC Act Threat abatement plan for predation by the European red fox (DEWHA 2008b)
Fregata minor	Great frigatebird	N/A	Migratory	Marine	Migratory	Least Concern	N/A
Sula sula	Red-footed booby	N/A	Migratory	Marine	Migratory	Least Concern	N/A
Thalasseus bengalensis	Lesser crested tern	N/A	N/A	Marine	N/A	Least Concern	N/A
Sterna dougallii	Roseate tern	N/A	Migratory	Marine	Migratory	Least Concern	N/A
Sterna hirundo	Common tern	N/A	Migratory	Marine	Migratory	Least Concern	N/A

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Species name	Common name	EPBC Act (Commonwealth) (as per PMST report Appendix A)			BC Act (WA)[14]	IUCN Red List (non-statutory)[15]	EPBC Act Part 13 statutory instrument
		Threatened status	***Migratory status***	***Listed***	***Conservation status***	***Global status***	
Puffinus assimilis	Little shearwater	N/A	N/A	N/A	N/A	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) EPBC Act Threat Abatement Plan to reduce the impacts of exotic rodents on biodiversity on Australian offshore islands of less than 100,000 ha (DEWHA 2009)
Anous stolidus	Common noddy	N/A	Migratory	Marine	Migratory	Least Concern	EPBC Act Threat Abatement Plan for predation by feral cats (DoE 2024)
Fregata ariel	Lesser frigatebird	N/A	Migratory	Marine	Migratory	Least Concern	
Phaethon rubricauda	Red-tailed tropicbird	N/A	Migratory	Marine	Migratory	Least Concern	
Thalasseus bergii	Greater crested tern	N/A	Migratory	Marine	Migratory	Least Concern	
Hydroprogne caspia	Caspian tern	N/A	Migratory	Marine	Migratory	Least Concern	
Calonectris leucomelas	Streaked shearwater	N/A	Migratory	Marine	Migratory	Near Threatened	
Phaethon lepturus	White-tailed tropicbird	N/A	Migratory	Marine	Migratory	Least Concern	
Phaethon lepturus fulvus	Christmas Island white-tailed tropic bird	Endangered	N/A	N/A	N/A	Data Deficient	Conservation Advice for *Phaethon lepturus fulvus* (golden bosun) (DCCEEW 2026f)
Phaethon rubricauda westralis	Red-tailed tropicbird (Indian Ocean)	Endangered	N/A	N/A	N/A	Data Deficient	Conservation Advice for *Phaethon rubricauda westralis* (Indian Ocean red-tailed tropicbird) (DCCEEW 2023h)

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Species name	Common name	EPBC Act (Commonwealth) (as per PMST report Appendix A)			BC Act (WA)[14]	IUCN Red List (non-statutory)[15]	EPBC Act Part 13 statutory instrument
		Threatened status	*Migratory status*	*Listed*	*Conservation status*	*Global status*	
All seabird species							Wildlife Conservation Plan for Seabirds (Commonwealth of Australia 2020a) National Light Pollution Guidelines for Wildlife (DCCEEW 2023j)
Migratory shorebirds							
Numenius madagascariensis	Eastern curlew, far eastern curlew	Critically Endangered	Migratory	Marine	Critically Endangered	Endangered	Conservation Advice *Numenius madagascariensis* Far eastern curlew (DCCEW 2023d)
Calidris ferruginea	Curlew sandpiper	Critically Endangered	Migratory	Marine	Critically Endangered	Vulnerable	Conservation Advice *Calidris ferruginea* Curlew sandpiper (DCCEEW 2023e)
Limosa lapponica menzbieri	Bar-tailed godwit (menzbieri)	Endangered	Migratory	Marine	Critically Endangered	Near Threatened	Conservation Advice *Limosa lapponica menzbieri* Yakutian bar-tailed godwit (northern Siberia) (DCCEEW 2024c)
Charadrius mongolus	Lesser sand plover	Endangered	Migratory	Marine	Endangered	Endangered	Conservation Advice *Charadrius mongolus* Lesser sand plover (Threated Species Scientific Committee 2016)
Rostratula australis	Australian painted snipe	Endangered	N/A	Marine	Endangered	Endangered	Conservation Advice *Rostratula australis* Australian painted snipe (Threatened Species Scientific Committee 2013b)
Calidris canutus	Red knot	Vulnerable	Migratory	Marine	Endangered	Near Threatened	Conservation Advice *Calidris canutus* Red knot (DCCEEW 2024d)
Calidris tenuirostris	Great knot	Vulnerable	Migratory	Marine	Critically Endangered	Endangered	Conservation Advice *Calidris tenuirostris* Great knot (DCCEEW 2024e)
Charadrius leschenaultii	Greater sand plover	Vulnerable	Migratory	Marine	Vulnerable	Least Concern	Conservation Advice *Charadrius leschenaultia* Greater sand plover (DCCEEW 2023f)
Limosa limosa	Black-tailed godwit	Endangered	Migratory	Marine	Migratory	Near Threatened	Conservation Advice for *Limosa limosa* Black-tailed godwit (DCCEEW 2024f)

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		Threatened status	***Migratory status***	***Listed***	***Conservation status***	***Global status***	
Limnodromus semipalmatus	Asian dowitcher	Vulnerable	Migratory	Marine	Migratory	Near Threatened	Conservation Advice for *Limnodromus semipalmatus* Asian dowitcher (DCCEEW 2024h)
Tringa nebularia	Common greenshank	Endangered	Migratory	Marine	Migratory	Least Concern	Conservation Advice for *Tringa nebularia* Common greenshank (DCCEEW 2024g)
Arenaria interpres	Ruddy turnstone	Vulnerable	Migratory	Marine	Migratory	Near Threatened	Conservation Advice for *Arenaria interpres* Ruddy turnstone (DCCEEW 2024i)
Calidris acuminata	Sharp-tailed sandpiper	Vulnerable	Migratory	Marine	Migratory	Vulnerable	Conservation Advice for *Calidris acuminata* Sharp-tailed sandpiper (DCCEEW 2024j)
Xenus cinereus	Terek sandpiper	Vulnerable	Migratory	Marine	Migratory	Least Concern	Conservation Advice for *Xenus cinereus* Terek sandpiper (DCCEEW 2024k)
Pluvialis squatarola	Grey plover	Vulnerable	Migratory	Marine	Migratory	Vulnerable	Conservation Advice for *Pluvialis squatarola* Grey plover (DCCEEW 2024l)
Pluvialis fulva	Pacific golden plover	N/A	Migratory	Marine	Migratory	Least Concern	EPBC Act Threat Abatement Plan for predation by feral cats (DoE 2024)
Calidris ruficollis	Red-necked stint	N/A	Migratory	Marine	Migratory	Near Threatened	
Numenius minutus	Little curlew	N/A	Migratory	Marine	Migratory	Least Concern	EPBC Act Threat Abatement Plan for predation by the European red fox (DEWHA 2008b)
Tringa totanus	Common redshank	N/A	Migratory	Marine	Migratory	Least Concern	N/A
Actitis hypoleucos	Common sandpiper	N/A	Migratory	Marine	Migratory	Least Concern	
Tringa stagnatilis	Marsh sandpiper	N/A	Migratory	Marine	Migratory	Least Concern	
Calidris melanotos	Pectoral sandpiper	N/A	Migratory	Marine	Migratory	Least Concern	

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Species name	Common name	EPBC Act (Commonwealth) (as per PMST report Appendix A)			BC Act (WA)[14]	IUCN Red List (non-statutory)[15]	EPBC Act Part 13 statutory instrument
		Threatened status	***Migratory status***	***Listed***	***Conservation status***	***Global status***	
Tringa glareola	Wood sandpiper	N/A	Migratory	Marine	Migratory	Least Concern	
Limicola falcinellus	Broad billed sand piper	N/A	Migratory	Marine	Migratory	Vulnerable	
Limosa lapponica	Bar-tailed godwit	N/A	Migratory	Marine	Migratory	Near Threatened	
Calidris pugnax	Ruff	N/A	Migratory	Marine	Migratory	Least Concern	
Numenius phaeopus	Whimbrel	N/A	Migratory	Marine	Migratory	Least Concern	
Calidris alba	Sanderling	N/A	Migratory	Marine	Migratory	Least Concern	
Calidris subminuta	Long-toed stint	N/A	Migratory	Marine	Migratory	Least Concern	
Gallinago stenura	Pin-tailed snipe	N/A	Migratory	Marine	Migratory	Least Concern	
Gallinago megala	Swinhoe's snipe	N/A	Migratory	Marine	Migratory	Least Concern	
Glareola maldivarum	Oriental pratincole	N/A	Migratory	Marine	Migratory	Least Concern	
Charadrius veredus	Oriental plover	N/A	Migratory	Marine	Migratory	Least Concern	
Tringa brevipes	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 (DCCEEW 2023j)

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Species name	Common name	EPBC Act (Commonwealth) (as per PMST report Appendix A)			BC Act (WA)[14]	IUCN Red List (non-statutory)[15]	EPBC Act Part 13 statutory instrument
		Threatened status	*Migratory status*	*Listed*	*Conservation status*	*Global status*	
Other marine birds							
Apus pacificus	Fork-tailed swift	N/A	Migratory	Marine	N/A	Least Concern	None
Pandion haliaetus	Osprey	N/A	Migratory	Marine	N/A	Least Concern	None

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9.2 Seabirds in the NWMR

Seabirds are birds that are adapted to life within the marine environment (oceanic and coastal). They are generally long-lived, have delayed breeding and have fewer young than other bird species (Commonwealth of Australia 2020a).

At least 27 key seabird species (high and moderate occurrence as per Worley (2024), or listed as threatened or migratory under the EPBC Act as identified in the PMST reports in Appendix A) are known to occur in the NWMR. These include various 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. These colonies are often 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 or 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, including many seabird species that breed on the Houtman Abrolhos Islands in the SWMR. Pelagic seabirds have been documented foraging at current boundaries and seasonal upwellings within the NWMR (Sutton *et al*. 2019). The Houtman Abrolhos Islands National Park in the SWMR is one of the most significant seabird breeding locations in the eastern Indian Ocean. Sixteen 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 (see Section 9.1), EPBC Act Bioregional BIAs and subject matter expert review, as presented in Worley (2024).

9.2.1 High-occurrence key seabird species

Species descriptions for high occurrence key seabird species are provided in the next subsections. High occurrence seabird species were defined as those with breeding and foraging aggregations known to occur within the NWMR (Worley 2024).

9.2.1.1 Australian fairy tern (nearshore seabird)

The Australian fairy tern (*Sternula nereis nereis*) is listed as vulnerable under the EPBC Act. The WA breeding population (about 5,000 to 6,000 mature individuals) is dispersed over about 2,500 km of coastline (Greenwell 2021). Within WA, 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 winter months.

Within the NWMR breeding occurs in small colonies between June and 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 SA. Here, the species typically forages in inshore waters and has been reported to rarely travel beyond 2 km during the breeding season in SA (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 includes species of sprats, hardy heads and larval prey of some demersal fish species. Unlike many other terns, fairy terns do not depend on large pelagic fishes to drive their prey to the surface.

Breeding BIAs are identified for the fairy tern in the NWMR, as presented in Figure 9-1.

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9.2.1.2 Australian lesser noddy (pelagic seabird)

The Australian lesser noddy (*Anous tenuirostris melanops*), which is endemic to Australia, is listed as 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, but 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 about 50,000 breeding pairs (Surman *et al.* 2016). At this location, studies indicate 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 they are largely diurnal, foraging between 4 am and 8:40 pm and returning to their colony at night (Surman *et al.* 2017). From this study, the global positioning system tracks of 17 adults during incubation or chick provisioning revealed most foraging trips lasted 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 population breeds during the Austral spring/summer (Surman and Wooller 1995).

No BIAs for the Australian lesser noddy overlap the NWMR and tracking data suggest 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 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, using habitats of the NWMR.

9.2.1.3 Bridled tern (pelagic seabird)

The bridled tern (*Onychiprion anaethetus*, listed as *Sterna anaethetus*) is listed as 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 to March (Johnstone *et al.* 2013). Small breeding populations have also been recorded on East Island at Ashmore Reef between April and November and the Lacapede 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 near 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 its breeding colonies within the NWMR, on outer continental shelf waters (Nicholson 2002; Dunlop *et al.* 2001).

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Although foraging may be concentrated around breeding colonies during the breeding season, no BIAs in the NWMR have been identified for this species.

9.2.1.4 Brown booby (pelagic seabird)

The brown booby (*Sula leucogaster*) is listed as 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 (5,000 pairs at Middle Island and 3,000 pairs at East Island in 2007, Swann 2005a; Swann 2005b; Swann 2005c; Milton 2005; Clarke 2010), Bedout Island (1,000 pairs) and Adele Island (7,500 pairs, Burbidge *et al*. 1987). Small colonies of up to ten 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 sea surface, and are known to form large aggregations on oil and gas platforms throughout the NWMR (Surman pers obs.), including Woodside facilities, indicating wider distribution of non-breeding individuals across the NWMR.

Breeding 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 9-2). Breeding is reported as occurring between January and March, but 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).

9.2.1.5 Caspian tern (nearshore seabird)

The Caspian tern (*Hydroprogne caspia*) is listed as 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 North West Cape, from late March to early November (Johnstone *et al.* 2013).

During breeding, adults can forage up to 60 km from the colony 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 terns 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.

9.2.1.6 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 Frazer 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

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round-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 about 950 km north to the NWMR (Surman *et al.* 2017). The species is often reported roosting on uncrewed oil and gas platforms within the NWS and Timor Sea (Surman pers obs. 2021).

Although widespread across the NWMR during breeding and non-breeding, no BIAs for this species are in the NWMR.

9.2.1.7 Frigate birds (pelagic seabirds)

The lesser (*Fregata ariel*) and great frigatebirds (*Fregata minor*) are both listed as migratory under the EBPC 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 Ashmore Reef and Adele Island, the lesser frigatebird also nests at Cartier Island, the Lacepede 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 breeds in the Austral winter (Clark and Herrod 2016).

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 and 1,400 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 the South China, Java and Sulu Seas and the Gulf of Thailand (Mott *et al.* 2021). During the wet season particularly, 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 to 30 cm, Surman pers obs.).

Breeding BIAs for the great frigatebird in the NWMR are associated with breeding colonies on Ashmore Reef and Adele Island (Figure 9-3). For the lesser frigatebird, breeding BIAs are associated with breeding colonies on Ashmore Reef, Adele Island, White Island, Lacepede Islands and Bedout Island (Figure 9-4).

9.2.1.8 Greater crested tern (nearshore seabird)

The greater crested tern (*Thalasseus bergii*) is listed as 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 amid colonies of other species, such as silver gull (del Hoyo *et al.* 1996). Colonies are 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 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 near (<40 km) 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). Further, crested terns require limited nesting material, thus forage near breeding sites for such materials (Surman *et al.* 2025).

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).

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Although there is known habitat use in the NWMR, there are no designated BIAs for the greater crested tern in the NWMR.

9.2.1.9 Lesser crested tern (nearshore seabird)

The lesser crested tern (*Thalasseus bengalensis*) is listed as marine under the EPBC Act and is known to breed on islands in the NWMR. This species inhabits sandy and coral coasts and estuaries and breeds on low-lying offshore islands. It forages for small pelagic fish and shrimps in the surf and offshore waters Commonwealth of Australia 2020.

This species has been recorded nesting regularly at the Lowendal Islands, with up to 200 pairs recorded among larger colonies of crested terns. The lesser crested tern has also been recorded nesting on Stena Island in the Kimberley region, Bedout Island in the Pilbara region, and may nest at the Montebello Islands. There are also breeding records for Ashmore Reef and Low Rocks and Adele Islands in the Kimberley (DSEWPaC 2012d).

Breeding BIAs across the NWMR are associated with known breeding colonies on islands (Figure 9-5).

9.2.1.10 Little shearwater (pelagic seabird)

The little shearwater (*Puffinus assimilis*) is listed as marine under the EPBC Act. This bird is typically sedentary and recluse and prefers feeding further offshore than similar birds. Breeding occurs in islands off southern WA, between Recherche Archipelago and the Houtman Abrolhos group. During the Australian summer, the little shearwater nests on grassy slopes and forests in self-excavated burrows or rock crevices among boulders (Kirwan *et al.* 2020).

A foraging BIA for this species is in the southern extent of the NWMR (Figure 9-6).

9.2.1.11 Little tern (nearshore seabird)

The little tern (*Sternula albifrons*) is listed as migratory under the EPBC Act and BC Act. There are three subpopulations of little tern in Australia and two of these are 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 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 near 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, but BIAs for foraging and resting have been identified across the NWMR (Figure 9-7), with a peak in breeding activity between June and October.

9.2.1.12 Masked booby (pelagic seabird)

The masked booby (*Sula dactylatra*) is listed as migratory under the EBPC Act. Within the NWMR, the subspecies *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 islands 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 Lacepede 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

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relatively small number of areas to breed, any catastrophe at these sites (such as oil spills, or disturbance and vandalism of nests) could have a substantial impact on the population (Birds Australia 2005).

Studies of foraging behaviour of individuals breeding within the NWMR are lacking, but studies at other locations indicate 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.

9.2.1.13 Red-footed booby (pelagic seabird)

The red-footed booby (*Sula sula*) is listed as 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, Botle 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 (Wiemerskirsch 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 BIAs for the red-footed booby are associated with breeding colonies at Ashmore Reef and Adele Island (Figure 9-8).

9.2.1.14 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 (1,400 to 2,000 pairs, references within Sommerfeld *et al.* 2015) with additional key breeding locations on Cocos (Keeling) group and islands of Ashmore Reef Marine Park (17 to 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 species nests on islands, stacks, atolls, cays or coastal cliffs (DCCEEW 2023h).

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 about foraging range when breeding in Australia, but observations at sea in the Ashmore Reef region demonstrate they can forage 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.

9.2.1.15 Roseate tern (nearshore seabird)

The roseate tern (*Sterna dougallii*) is listed as migratory under the EPBC Act and BC Act. This species is generally subtropical 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 WA is in the Houtman Abrolhos Islands (Surman and Nicholson 2009), with roseate terns requiring limited nesting material, thus foraging near breeding sites for nesting materials (Surman *et al.* 2025). Large colonies breed within the Lowendal Islands and Montebello Islands 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 and August.

Birds are known to usually move away from breeding colonies after 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, high numbers are also recorded at the Eighty Mile Beach Ramsar site (Surman pers obs.).

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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 9-9).

9.2.1.16 Sooty tern (nearshore seabird)

The sooty tern (*Onychoprion fuscatus*) inhabits tropical and subtropical oceans around the world and nests on remote islands that have limited human interaction. This species lives on the wing and remains airborne for years at a time between fledging and its first breeding, never returning to land during the nonbreeding seasons nor observed resting on the water. Sooty tern breeding colonies are dense, with pairs generally nesting on the ground in sandy substrate or sparse vegetation. In contrast to most terns who feed by plunge diving, the sooty tern forages by 'dipping' or merely brushing the surface of the water or by snatching small fish in midair as they escape from predators (Schreiber *et al.* 2020).

The sooty tern has a foraging BIA overlapping the southern extent of the NWMR (Figure 9-10).

9.2.1.17 Wedge-tailed shearwater (pelagic seabird)

The wedge-tailed shearwater (*Ardenna pacifica*) is listed as migratory under the EPBC Act and 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, about one million pairs breed in Australia, most of which do so on islands in WA 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 exist on Muiron Islands (300,000 pairs) and Serrurier Island (60,000 pairs) (Surman and Nicholson 2009; 2015).

Adults are absent from their breeding colonies during the interbreeding period and return from their tropical Indian Ocean overwintering 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. Adults may not return to feed chicks each night; wedge-tailed shearwaters breeding on Muiron Island (north) undertook extensive foraging trips during the incubation period (1,200 to 1,400 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 trips 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 in Queensland, Lord Howe Island in 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, global positioning system tracking studies found 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 the division of nocturnal and diurnal foraging. Wedge-tailed shearwaters

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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 4,500 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, about 6,000 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 and August (Surman pers obs.).

Breeding BIAs are located for the wedge-tailed shearwater across the NWMR (Figure 9-11). It is noted both breeding and foraging BIAs represent foraging habitat used by adult (chick-rearing) wedge-tailed shearwaters during the breeding season.

9.2.1.18 White-tailed tropicbird (pelagic seabird)

The white-tailed tropicbird (*Phaethon lepturus*) is listed as migratory under the EPBC Act and BC Act. The species breeds across many sites, but in low numbers (Commonwealth of Australia 2020). In Australia, between 6,000 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 subspecies *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 (ten breeding pairs and up to three nesting pairs; Clark 2010; Burbidge *et al.* 1996, respectively). Breeding can occur year round (Clarke and Herrod 2016).

Pennycuick *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 1,400 and 1,600 km south-east of Christmas Island.

This species regularly roosts on the sea surface 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 9-12).

9.2.2 Moderate-occurrence key seabird species

Table 9-2 summarises descriptions for moderate occurrence key pelagic and nearshore seabird species.

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Table 9-2: Species summary for moderate occurrence pelagic and nearshore seabird species within the NWMR

Species	NWMR 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 to Aug	Diurnal and nocturnal Pursuit-plunging, surface-seizing	Fish, cephalopods
Soft-plumaged petrel	Non-breeding, migration: Jan to Jun	Diurnal and nocturnal Dipping, surface-seizing	Crustaceans, fish
Streaked shearwater	Non-breeding: Dec to Apr	Diurnal and nocturnal Surface-seizing	Fish, squid, crustacean
Wilson's storm petrel	Non-breeding: Jun to Dec	Diurnal and nocturnal Dipping, surface-seizing	Crustaceans, fish
Common tern	Non-breeding: Aug to Mar	Diurnal Surface-plunging, dipping	Fish
Christmas Island white-tailed tropicbird	Year-round low-density presence associated with foraging breeding and non-breeding individuals	Diurnal Surface-plunging, dipping; aerial foraging over open ocean	Fish, squid, crustaceans

9.2.3 Biologically important areas for seabirds

A review of the Australian Marine Spatial Information System (Geoscience Australia 2026) identified BIAs representing important life cycle stages and behaviours for nine species of seabird in the NWMR. These are presented in Table 9-3.

The NWMR is important for multiple oceangoing and nearshore seabird species, as described in the preceding sections. DCCEEW is actively updating BIAs, with revisions to the datasets occurring in June 2024, January 2025 and December 2025 (DCCEEW 2025b) for a range of these seabird species. These BIA revisions have removed all foraging BIAs for seabirds throughout the NWMR. It is noted many of the listed seabird species do forage in the region. Refer to the detailed species descriptions, particularly with note to the pelagic (oceangoing) wedge-tailed shearwater (Section 9.2.1.1) and nearshore, residential tern species that have foraging BIAs listed in the SWMR (Section 9.2.1.1).

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Table 9-3: Seabird BIAs within the NWMR

Seabird species	Woodside activity area			BIAs		
	Browse	***NWS/ Scarborough***	***North West Cape***	***Foraging***	***Breeding***	***Resting***
Australia fairy tern	-	✓	✓	No foraging BIAs in the NWMR Foraging in high numbers: the BIA is in the SWMR, including the Houtman Abrolhos Islands	Pilbara and Gascoyne coasts and islands, including Dampier Archipelago, Montebello, Lowendal and Barrow island groups, south Ningaloo and Bernier Island of Shark Bay	-
Brown booby	✓	✓	-	-	Kimberley and northern Pilbara coasts and islands, including Ashmore Reef, Eighty Mile Beach, Lacepedes, Adele Island and North Kimberley	-
Greater frigatebird	✓	-	-	-	Kimberley coast, including Ashmore Reef and Adele Island	-
Lesser frigatebird	✓	✓	-	-	Kimberley and northern Pilbara coasts and islands, including Ashmore Reef, Eighty Mile Beach, Lacepedes and Adele Island	-
Lesser crested tern	✓	✓	✓	-	Islands off the north and west Kimberley, and Bedout Island, Lowendal Islands, Thevenard Island and island off Dirk Hartog	-
Little shearwater	-	-	✓	From Kalbarri to Eucla, including offshore waters	-	-
Little tern	✓	✓	-	-	Kimberley and northern Pilbara coasts and islands, including Ashmore Reef, Scott Reef, Roebuck Bay, Rowley Shoals and Adele Island	Adele Island, Ashmore Reef, Scott Reef and Roebuck Bay
Red-footed booby	✓	-	-	-	Ashmore Reef and Adele Island	-

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Seabird species	Woodside activity area			BIAs		
	Browse	***NWS/ Scarborough***	***North West Cape***	***Foraging***	***Breeding***	***Resting***
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	Kimberley, Pilbara and Gascoyne coasts and islands, including Ashmore Reef, Dampier Archipelago, Montebello, Lowendal and Barrow island groups, south Ningaloo and barrier island of Shark Bay	Eighty Mile Beach
Sooty tern	-	-	✓	Foraging – Timor Sea out to 14º30, off north-west coast from Lacepede Island south-west to 117ºE. including the Abrolhos, Fisherman and Lancelin islands, unexpected on lower west coast to Hamelin Bay. Breeding visitor (late Aug to early May) Abrolhos and Lancelin islands; casual winter (Nov to Apr) to Fisherman Island	-	-
Wedge-tailed shearwater	✓	✓	✓	No foraging BIAs in the NWMR Foraging in high numbers: the BIA is in the SWMR, including the Houtman Abrolhos Islands	Kimberley, Pilbara and Gascoyne coasts and islands, including Ashmore Reef	-
White-tailed tropicbird	✓	✓	-	-	Rowley Shoals and Ashmore Reef	-

Source: Geoscience Australia 2026

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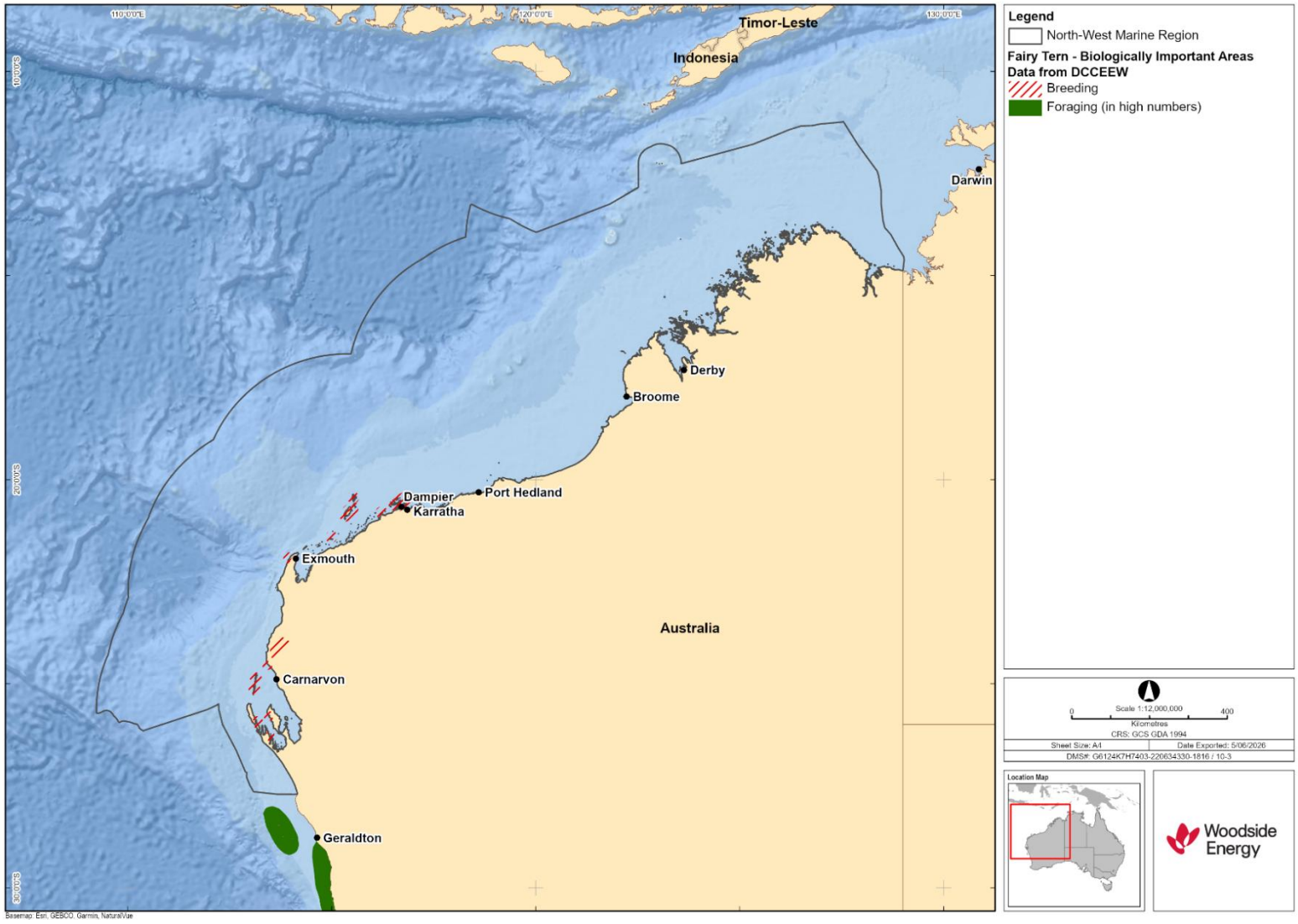


Figure 9-1: Australian fairy tern BIAs for the NWMR

Source: DCCEEW (2025b)

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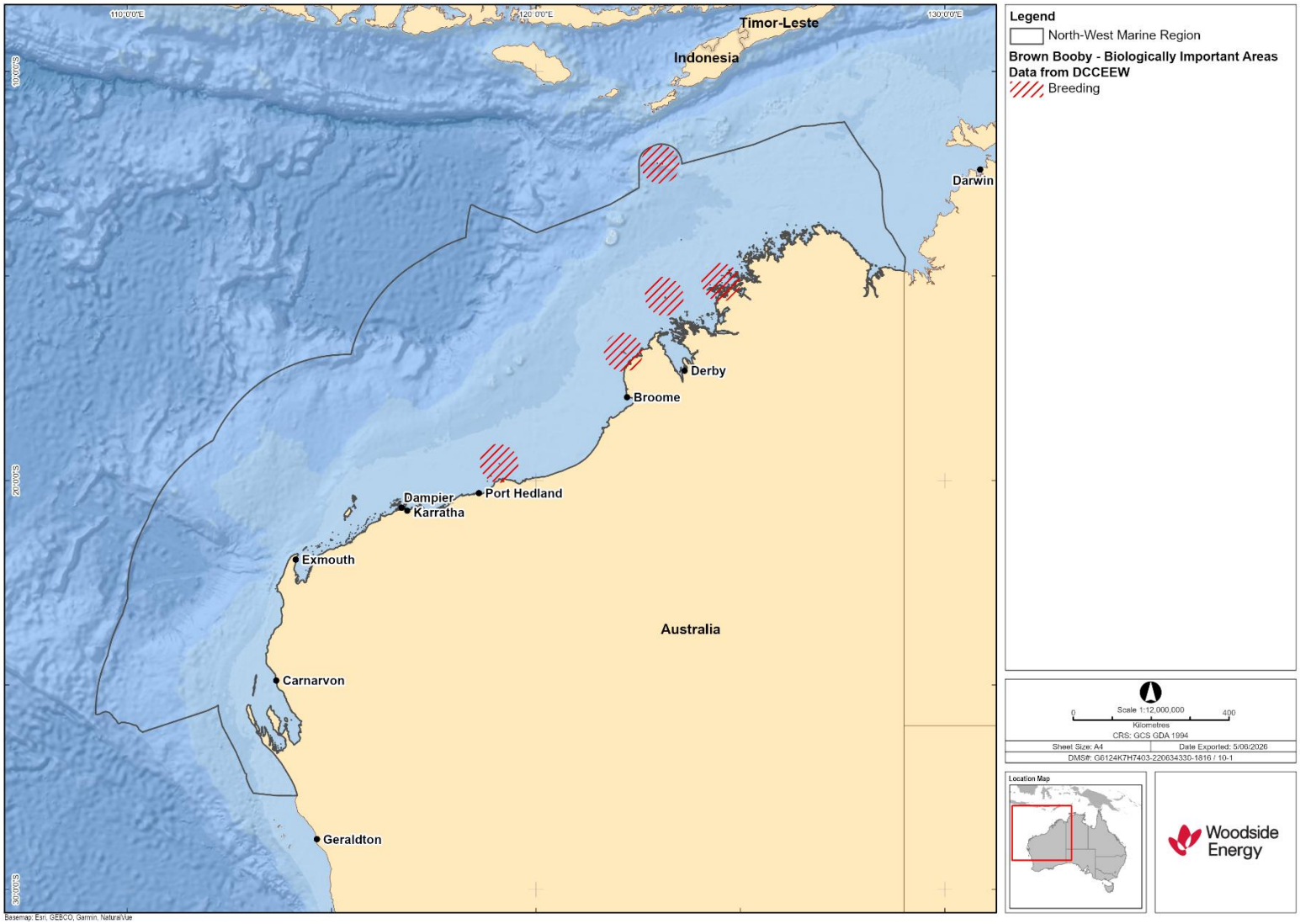


Figure 9-2: Brown booby BIAs for the NWMR

Source: DCCEEW (2025b)

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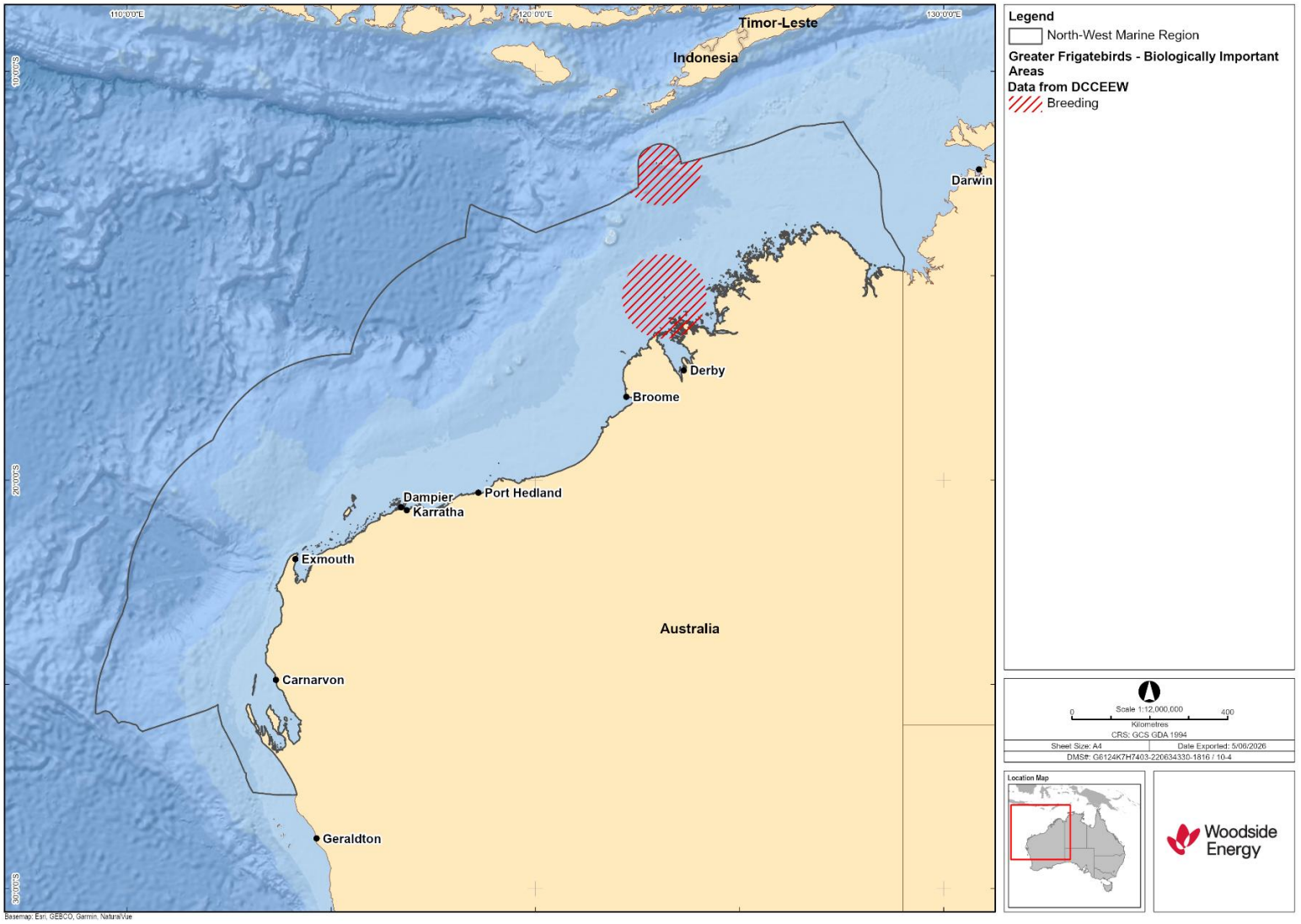


Figure 9-3: Greater frigatebird BIAs for the NWMR

Source: DCCEEW (2025b)

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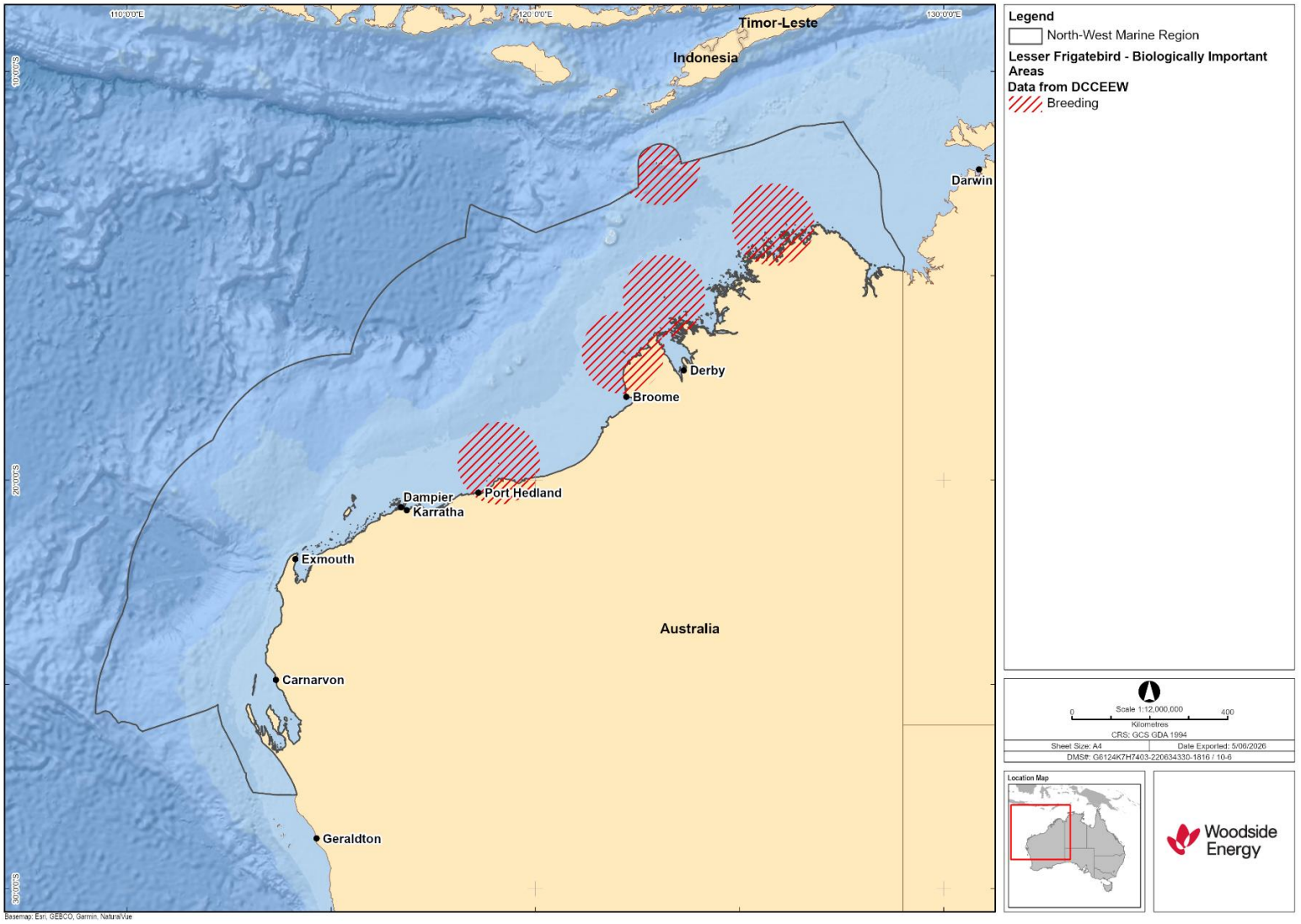


Figure 9-4: Lesser frigatebird BIAs for the NWMR

Source: DCCEEW (2025b)

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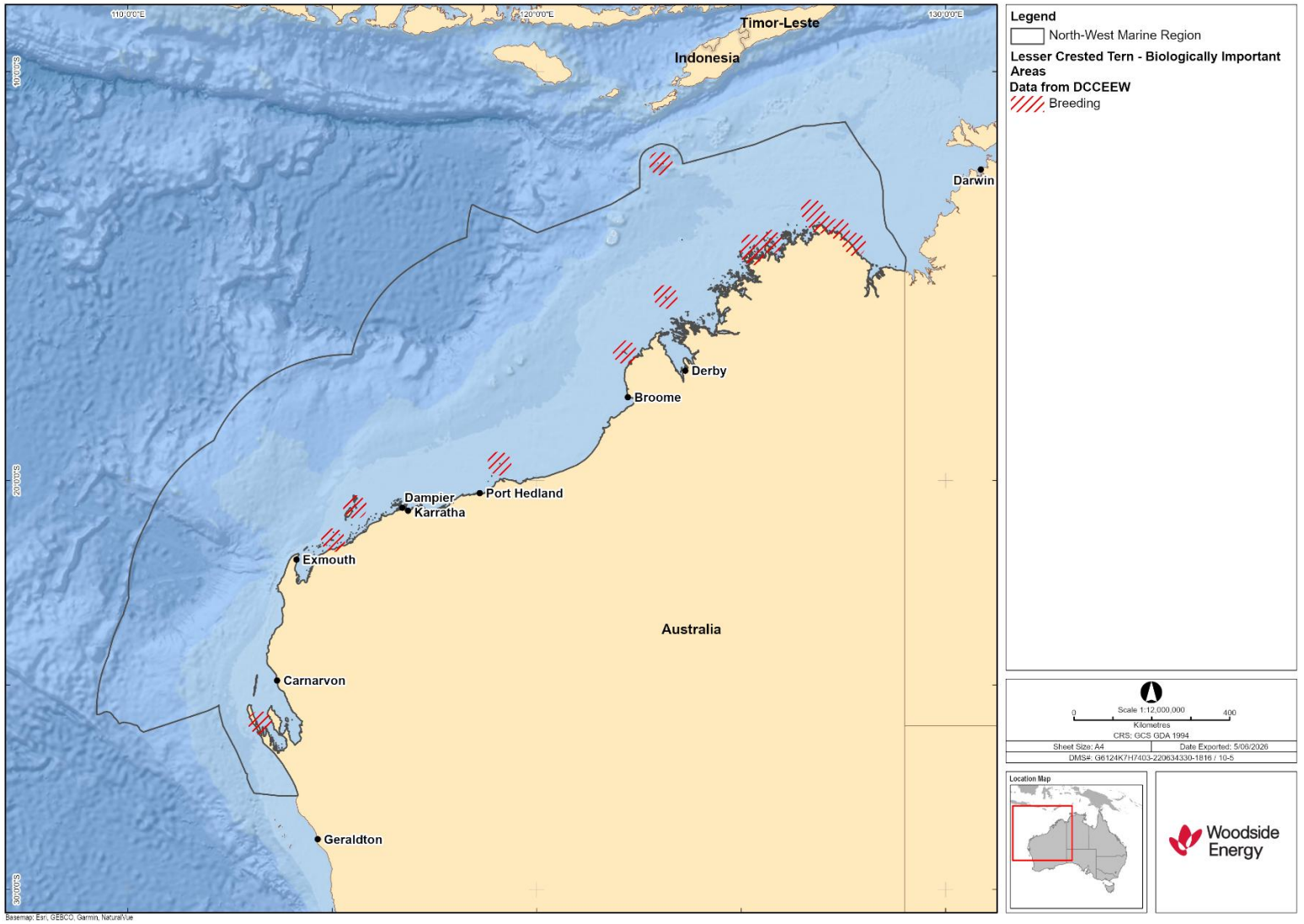


Figure 9-5: Lesser crested tern BIAs for the NWMR

Source: DCCEEW (2025b)

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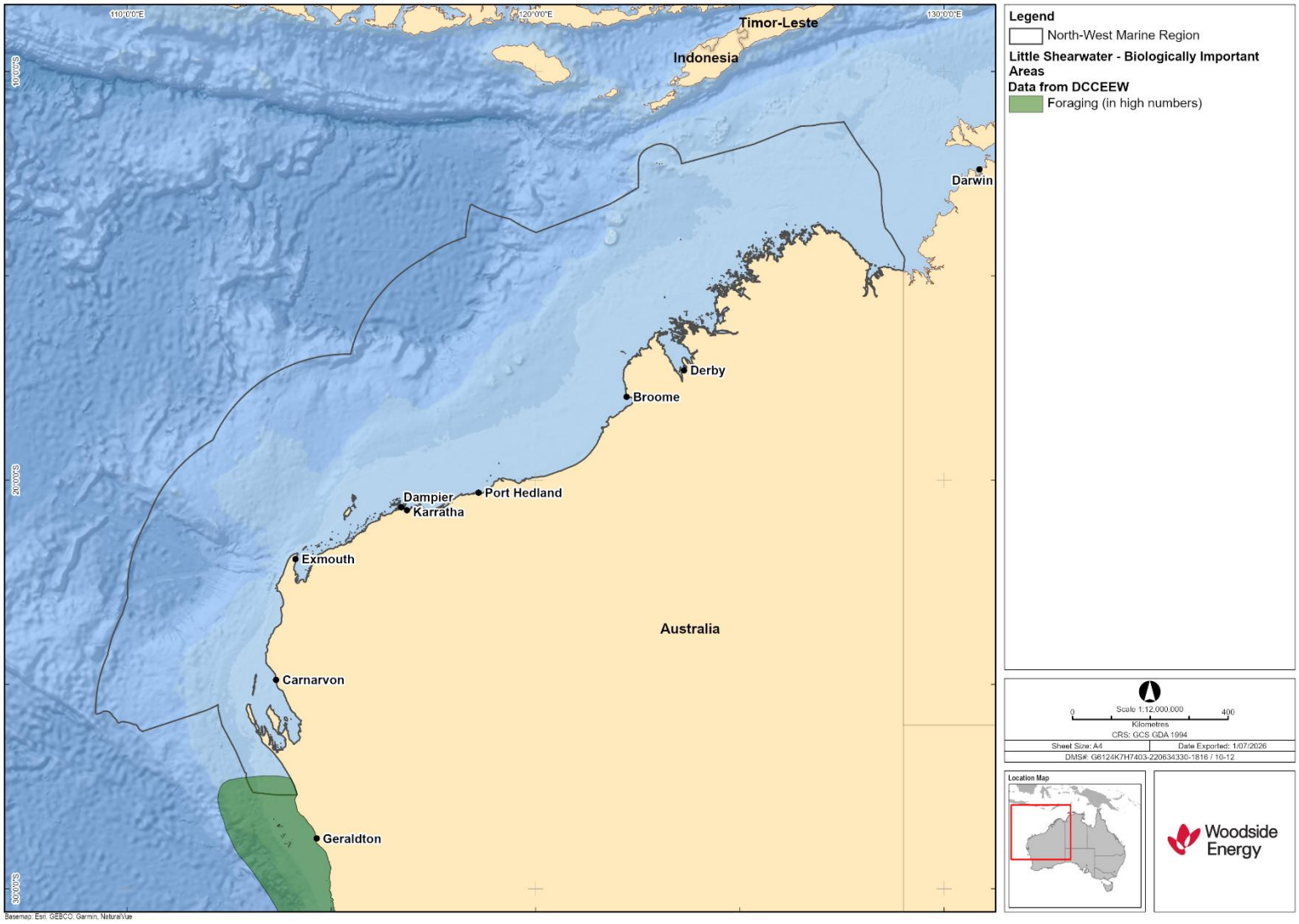


Figure 9-6: Little shearwater BIAs for the NWMR

Source: DCCEEW (2025b)

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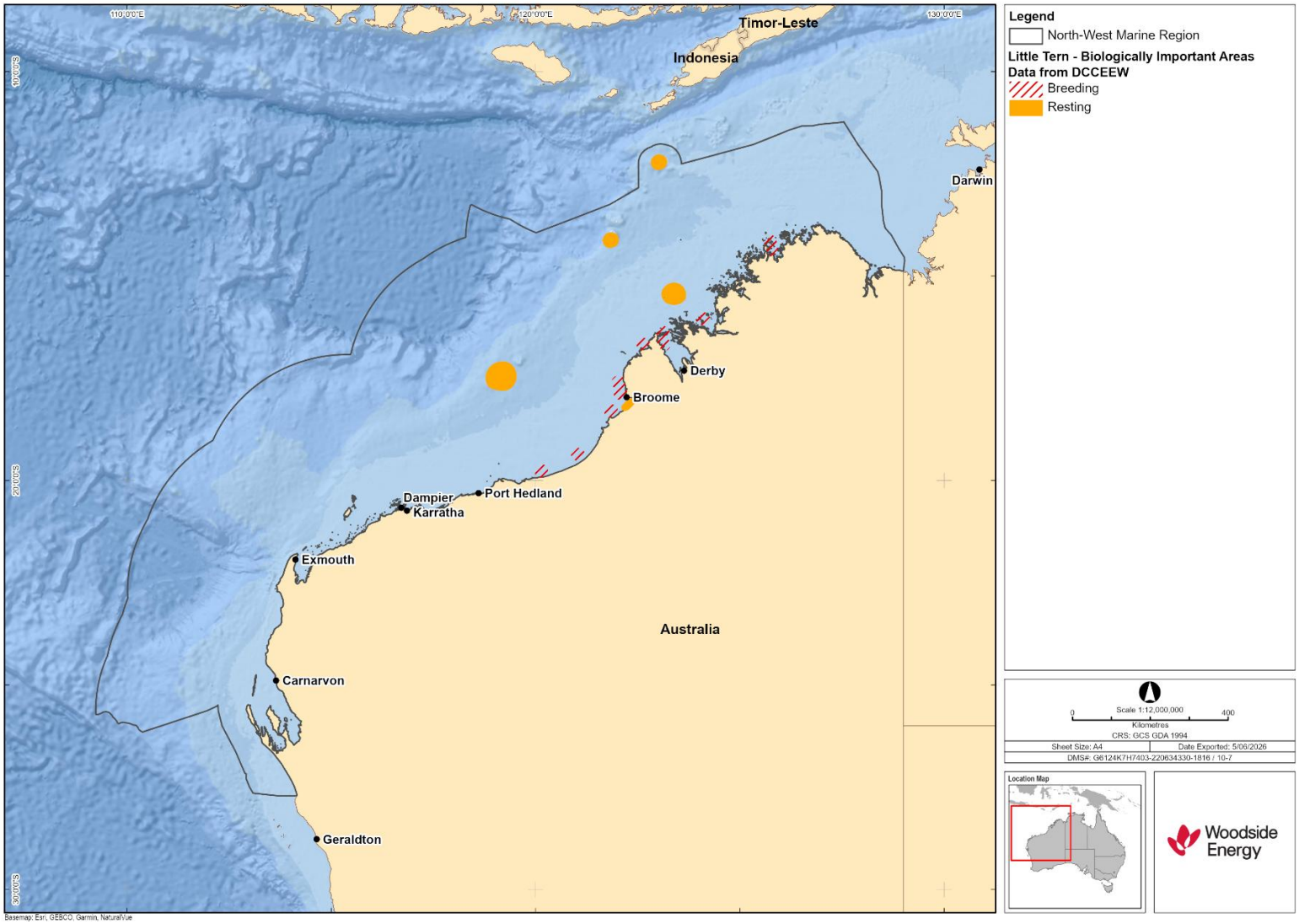


Figure 9-7: Little tern BIAs for the NWMR

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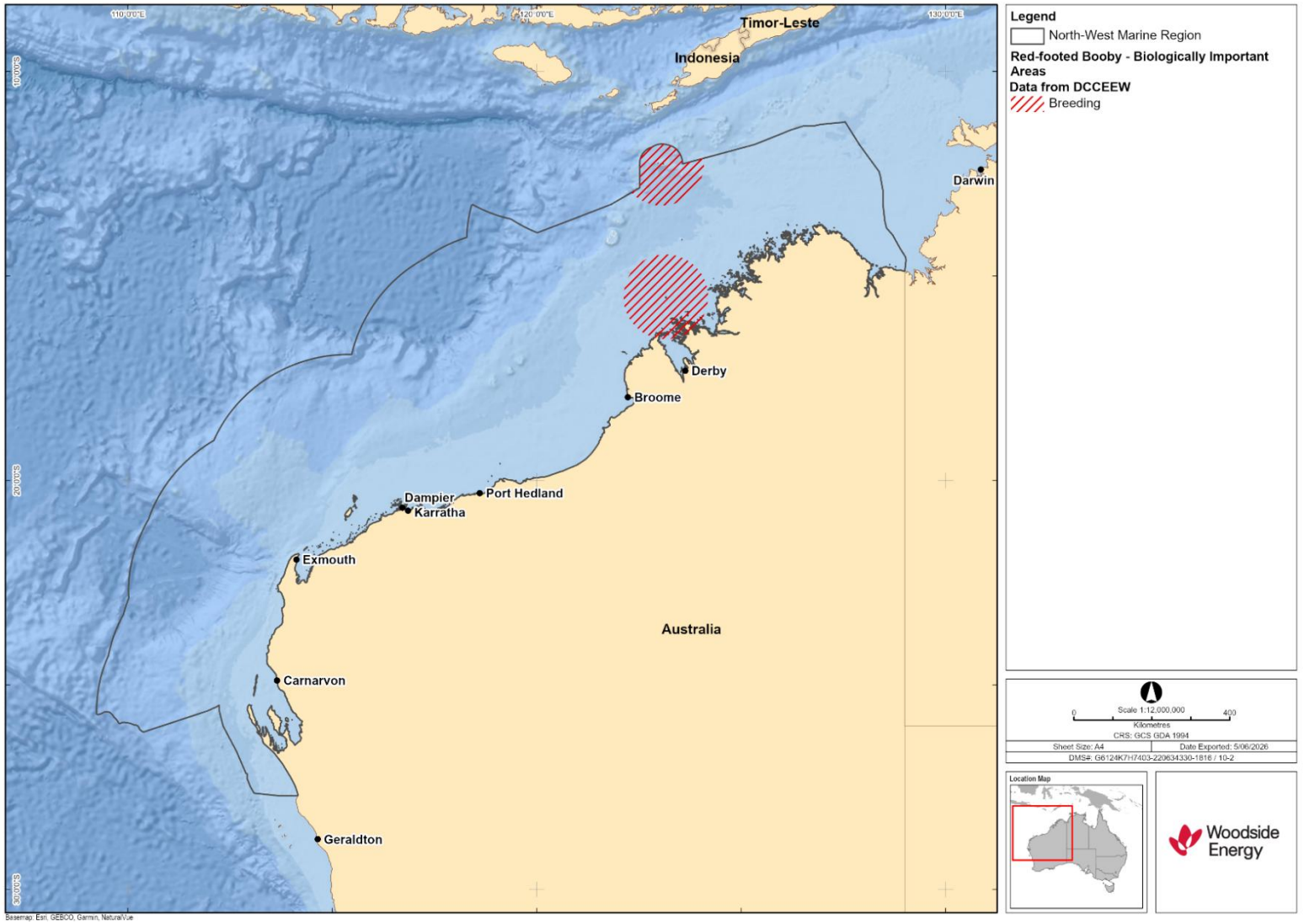


Figure 9-8: Red-footed booby BIAs for the NWMR

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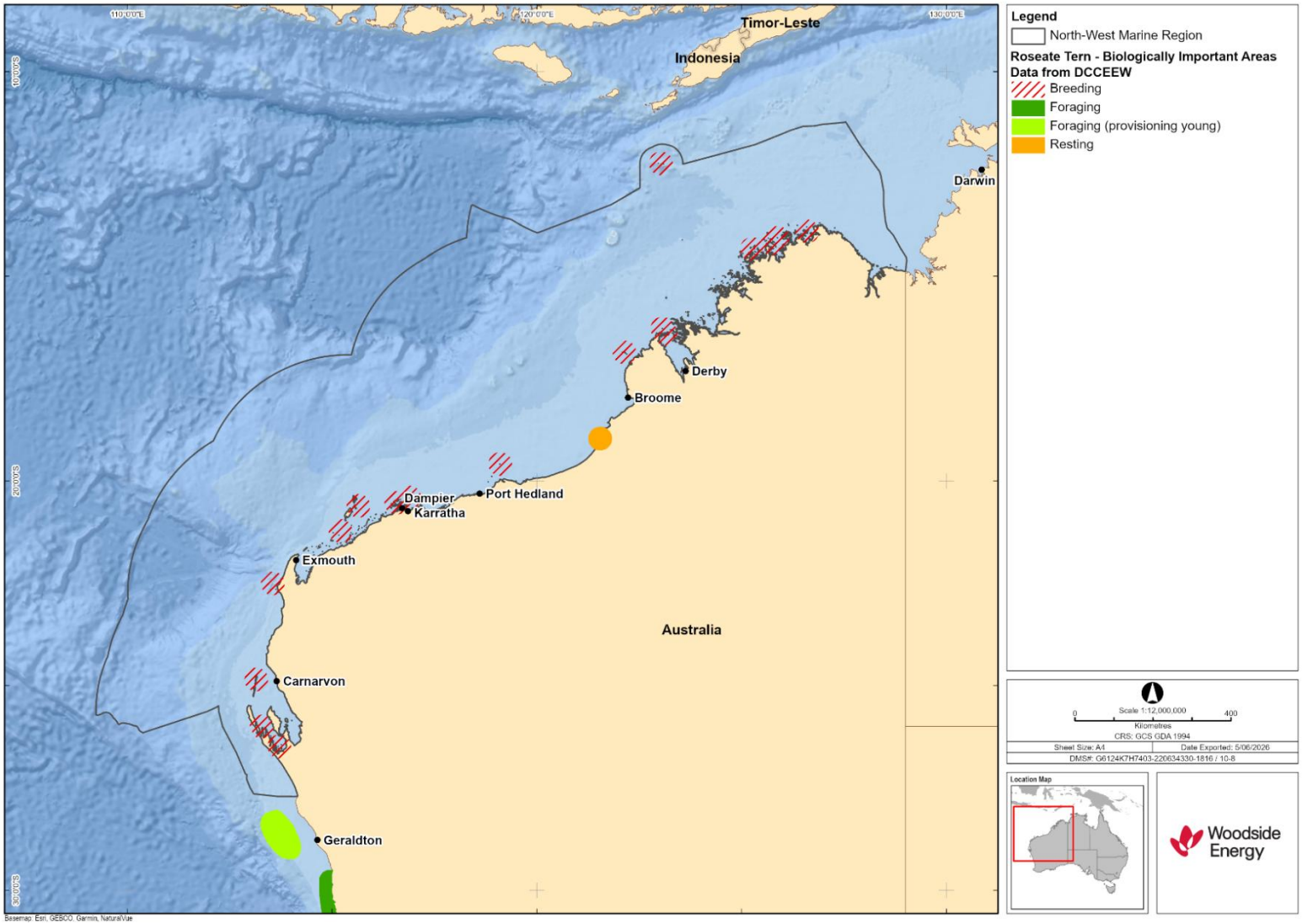


Figure 9-9: Roseate tern BIAs for the NWMR

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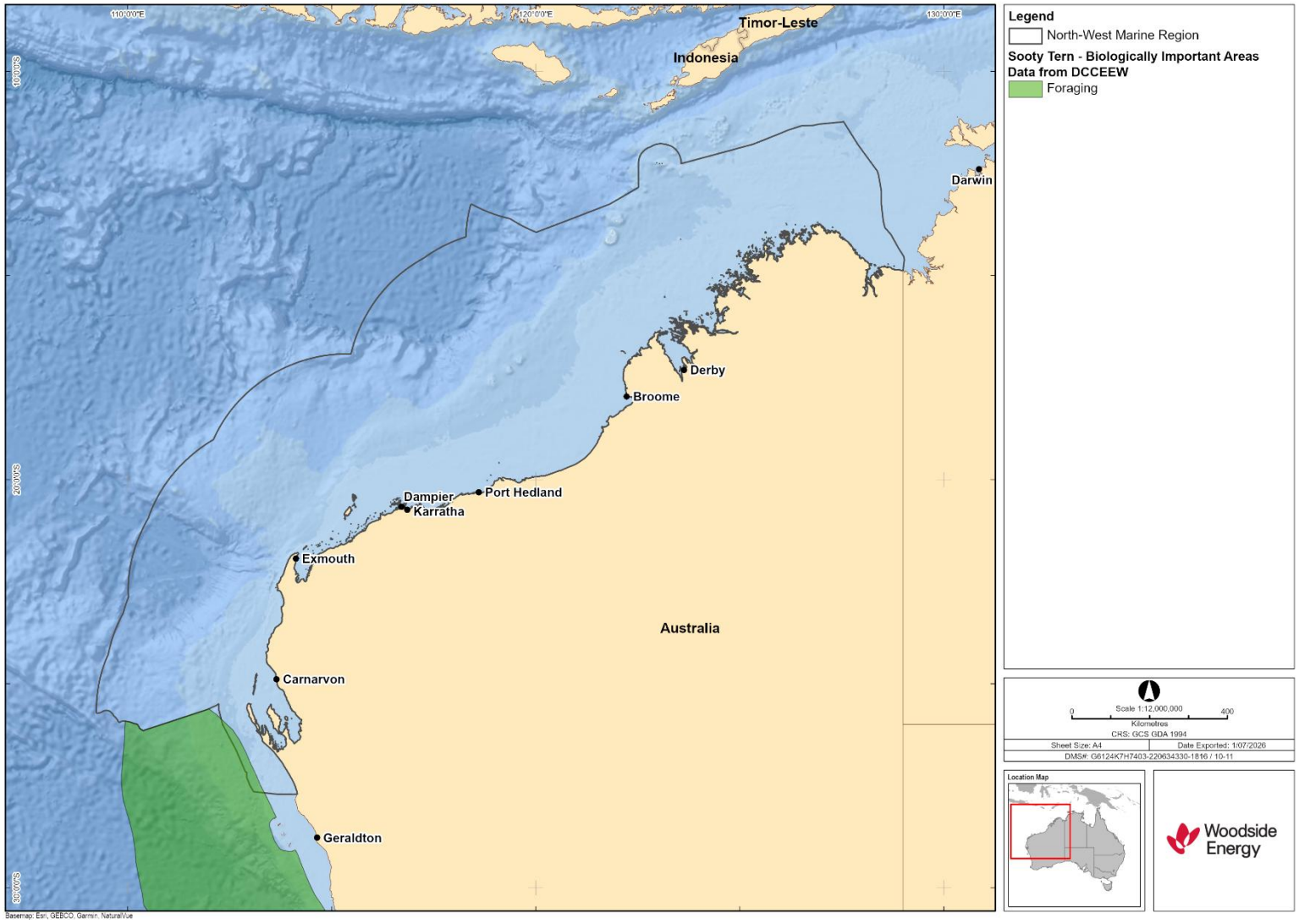


Figure 9-10: Sooty tern BIAs for the NWMR

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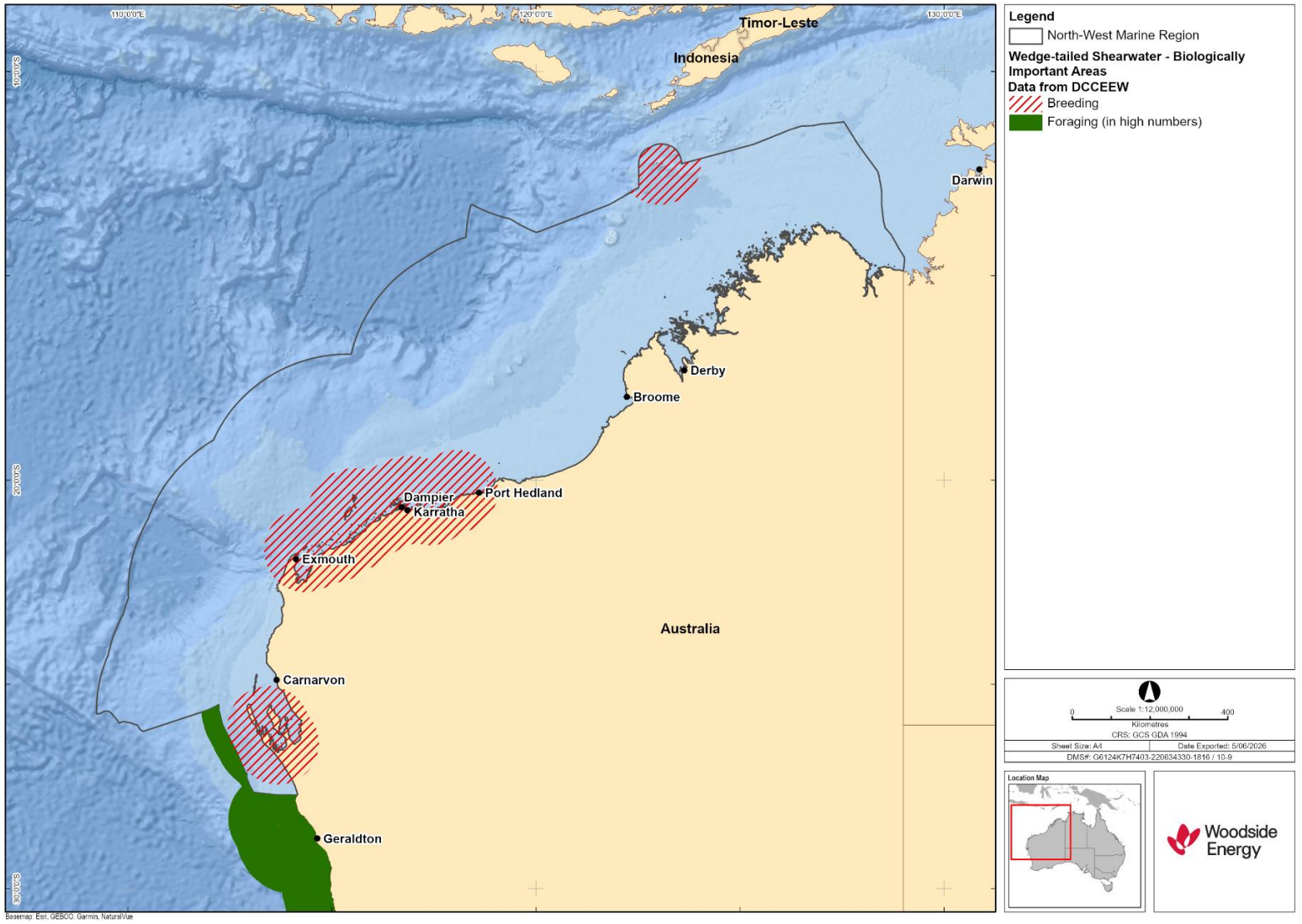


Figure 9-11: Wedge-tailed shearwater BIAs for the NWMR

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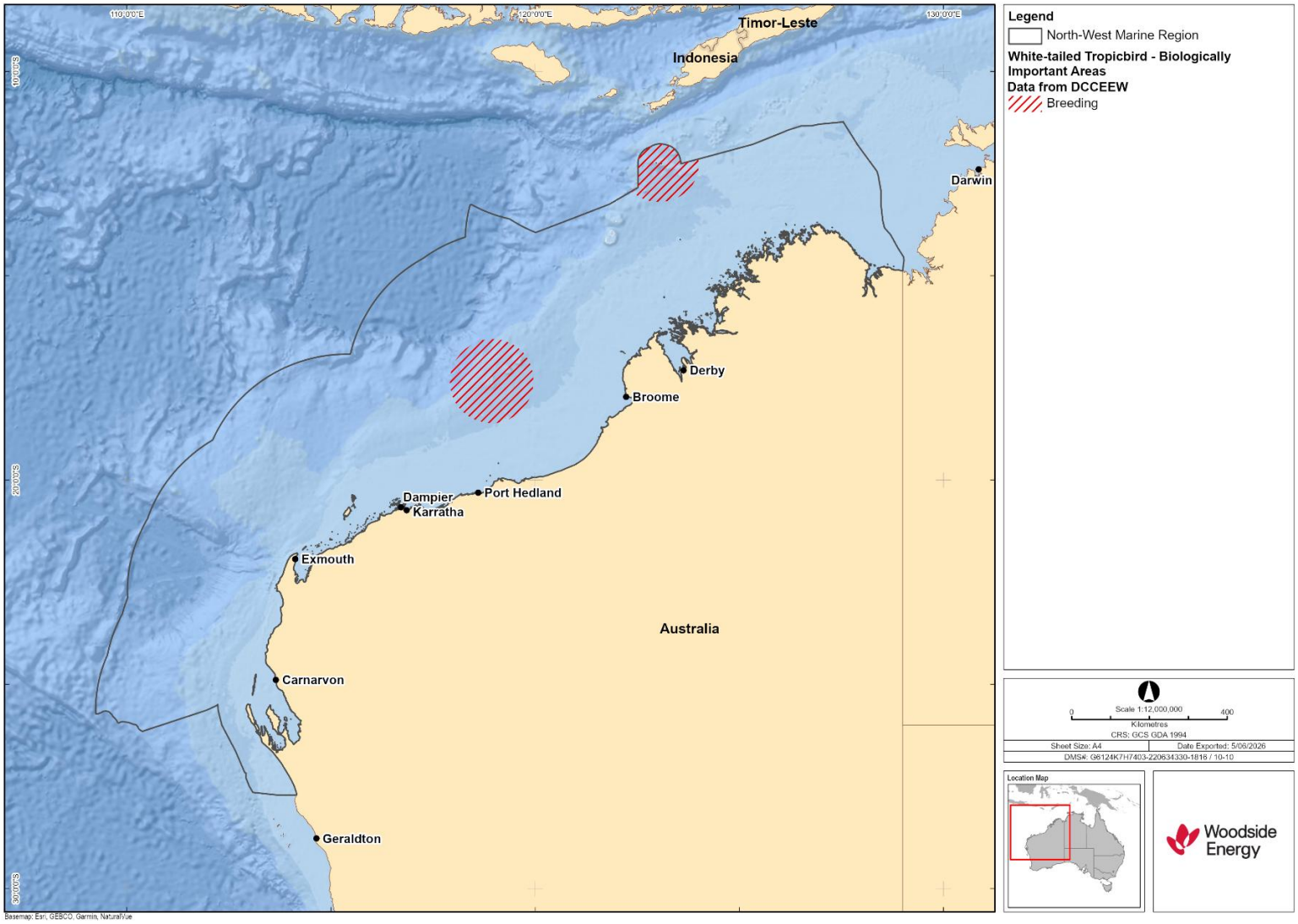


Figure 9-12: White-tailed tropicbird BIAs for the NWMR

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9.3 Shorebirds in the NWMR

Shorebirds (migratory and resident species) are generally associated with wetland or coastal environmentsI the NWMR hosts many, particularly in the Austral summer (see 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.

At least 34 key shorebird species (high and moderate occurrence as per Worley (2024), or listed as threatened or migratory under the EPBC Act) are known to occur in the NWMR. The NWMR is situated within the EAAF, a geographic region supporting populations of migratory shorebirds throughout their annual cycle (Bamford *et al.* 2008). Australia supports >67% of the entire flyway population for 11 migratory shorebird species (such as the far eastern curlew, great knot, oriental pratincole, little curlew and red-necked stint) (Driessen *et al*. 2026). The EAAF extends from breeding grounds in the Russian tundra, Mongolia and Alaska southwards through east and southeast 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 are known to migrate through the offshore areas of the NWMR between overwintering 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). Several key EAAF sites in the NWMR, such as Eighty Mile Beach, Roebuck Bay and the Gulf of Carpentaria, receive large influxes of birds during the southward and northward migrations (Driessen *et al.* 2026). The 220 km stretch of sand, mudflats and mangroves of Eighty Mile Beach receives the largest numbers of shorebirds out of all the sites in Australia (Williams *et al.* 2026). During the southward migration, large influxes of birds begin arriving at key EAAF sites in the NWMR by late August before dispersing across Australia, with many reaching the southeastern states by October (Driessen *et al.* 2025). Immature migratory shorebirds have a slower southwards migration and tend to arrive in Australia from September to late November (Rogers *et al.* 2025). Toward the end of the non-breeding season, birds return to major sites within the NWMR by March, where they feed intensely to prepare for a northward migration in March and April (Driessen *et al.* 2025). Migration routes of some migratory shorebird species have been characterised using band recoveries (Minton *et al.* 2006), but the migration pathways taken between sightings are poorly understood.

Migratory shorebird species are in Australia during the non-breeding period (December to February), in coastal and inland habitats where adult birds feed and rest, accumulating 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 The high energy demands of migration mean both foraging and resting during the non-breeding period are vital for individual fitness and survival (Commonwealth of Australia 2015c). Some young shorebirds may choose to delay migration based on achieving body composition and fuel stores to support migration, or due to the delayed timing of flight-feather and pre-breeding moults (Rogers *et al.* 2025). Coastal shorebird species tend to delay maturity more than species that spend their non-breeding season in non-tidal inland wetlands.

Long-term monitoring of 15 migratory shorebird taxa over 28 years shows varied population trajectories; four species have declined by more than 50%, three by more than 30%, five by less than 30%, and two species have increased. Notably, five species that declined by more than 30% exhibited higher mean annual growth rates in 2012 to 2021 compared to 1993 to 2012, indicating a potential slowing of decline (Rogers *et al.* 2025).

Due to differences in coastal or wetland habitat requirements between roosting and foraging behaviours, areas used most by migratory shorebirds usually comprise networks of coastal or wetland foraging and roosting habitats (Commonwealth of Australia 2015c). Coastal habitats such as mudflats, saltmarsh and mangroves, which are rich in benthic macroinvertebrates, are important foraging habitats for migratory shorebirds (Williams *et al.* 2026). Other foraging habitats can also include inland ephemeral wetlands, which have been recorded to intermittently support high numbers of migratory shorebirds after major rainfall events (Driessen *et al.* 2026).Shorebirds move between areas of this network, depending on the time of day, availability of resources, levels of disturbance and environmental conditions Displacement from one habitat or the other may result in use of sub-optimal habitat or increase in energetic demands via increased distance

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between habitats (Commonwealth of Australia 2015c). Foraging habitat preference is linked to the availability of prey as many shorebirds have narrow foraging and dietary niches, which vary between species (Williams *et al.* 2026).

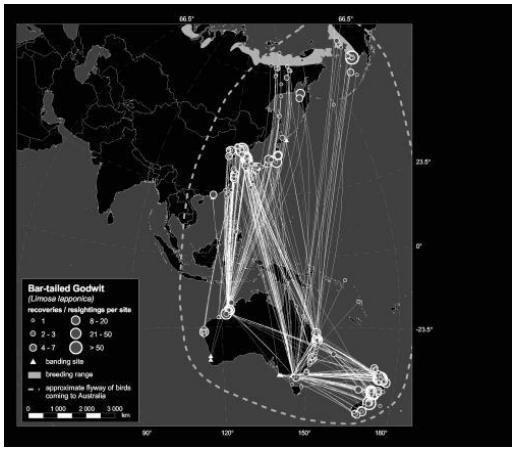
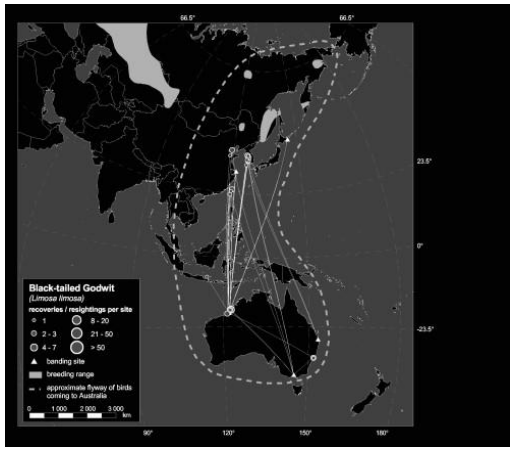
Within the EAAF, “a wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird” (Ramsar Convention Bureau 2000). All shorebirds identified as high occurrence key species occur in shoreline habitats within 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).

Table 9-4 and Table 9-5 provide descriptions for key high and moderate occurrence shorebird species, including information about migration routes where available. 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.

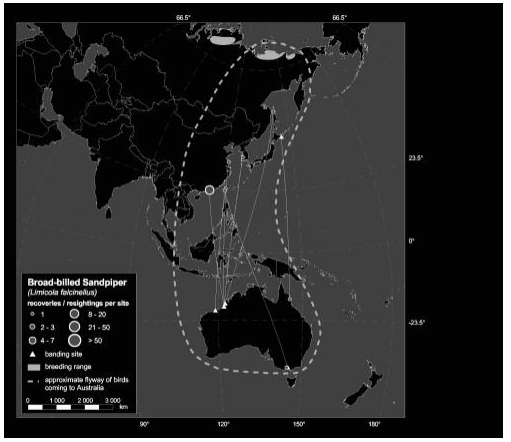
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Table 9-4: Species summary for high and selected moderate occurrence key shorebird species

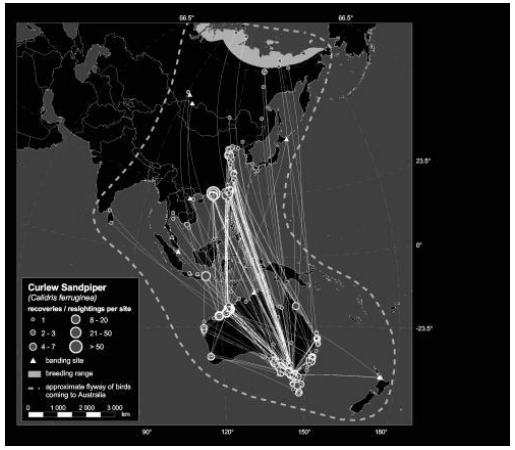
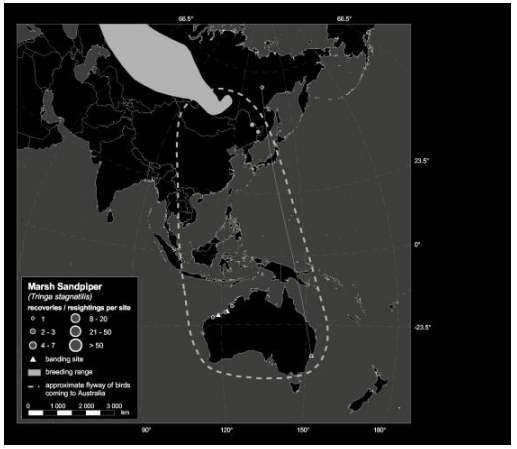
Species	Presence in NWMR	Roosting habitat	Foraging habitat	Diet	Migration From Minton *et al.* (2006)
Bar-tailed godwit[16]	Widespread around the coast as far east as Derby, with a few scattered records elsewhere in the Kimberley *Internationally important sites:* • Roebuck Bay • Eighty Mile Beach	Sandy beaches, sandbars, spits and 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 *Internationally important site:* • Roebuck Bay	Claypan	Intertidal mudflats or sandflats	Annelids, crustaceans, arachnids, fish eggs and spawn and tadpoles	

[16] 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.

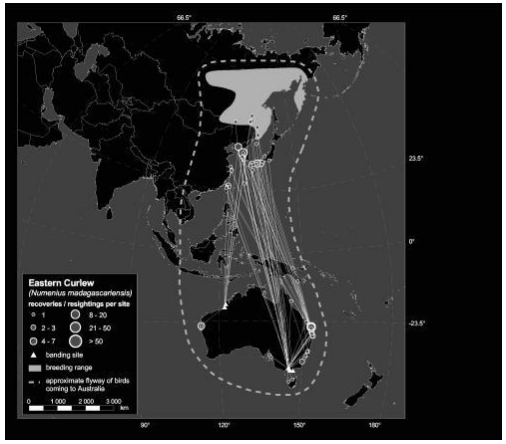
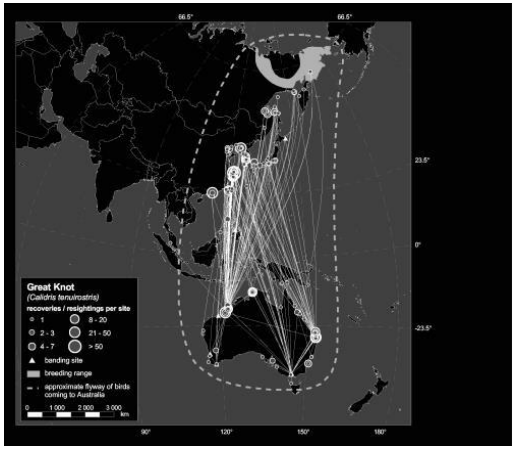
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Species	Presence in NWMR	Roosting habitat	Foraging habitat	Diet	Migration From Minton *et al.* (2006)
Broad billed sand piper	Regular visitor to coasts of the Pilbara and Kimberley between Onslow and Broome *Internationally important site:* • Port Hedland Saltworks	Sheltered sandy, shelly or shingly beaches	Mudflats, mangroves	Molluscs, crustaceans, insects, seeds and worms, including polychaetes	
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

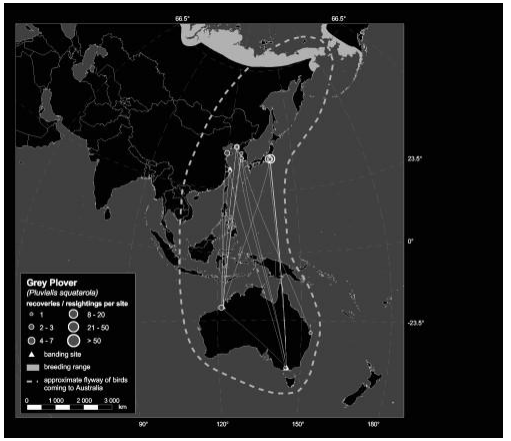
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Species	Presence in NWMR	Roosting habitat	Foraging habitat	Diet	Migration From Minton *et al.* (2006)
Curlew sandpiper	Widespread around coastal and subcoastal plains Non-breeding one year old birds may remain in Australia rather than migrating north *Internationally important sites:* • Dampier Saltworks • Port Hedland Saltworks • Eighty Mile Beach • Roebuck Bay	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, insects and seeds	
Marsh sandpiper	Widespread; notable areas include Eighty Mile Beach, Port Hedland Saltworks	Tidal mudflats	Mudflats, marshy vegetation	Molluscs, crustaceans and insects	

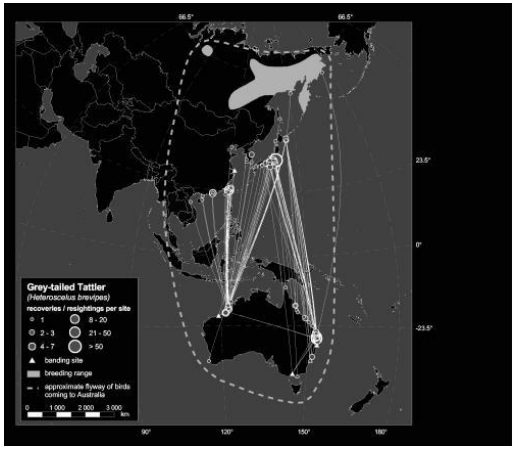
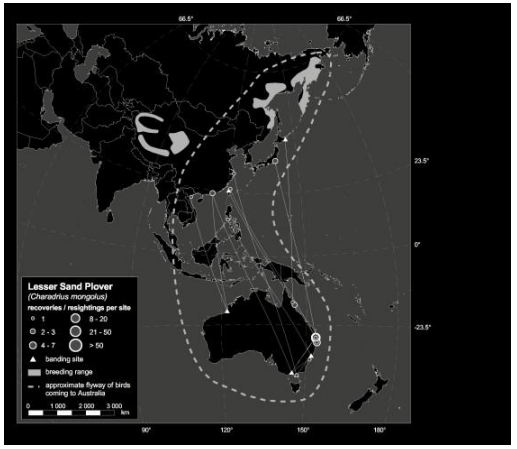
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Species	Presence in NWMR	Roosting habitat	Foraging habitat	Diet	Migration From Minton *et al.* (2006)
Eastern curlew	Continuous distribution from Barrow Island and Dampier Archipelago through the Kimberley region *Internationally important sites:* • Eighty Mile Beach • Roebuck Bay	Sandy spits, sandbars and islets, beaches near the high water mark, and coastal vegetation, including low saltmarsh or mangroves	Soft sheltered intertidal sandflats or mudflats, salt flats and saltmarsh, near mangroves, among rubble on coral reefs, and beaches near the tideline	Crustaceans, insects and small molluscs	
Great knot	Common on the coasts of the Pilbara and Kimberley, from the Dampier Archipelago to the NT border *Internationally important sites:* • Eighty Mile Beach • Roebuck Bay	Roosts in large groups in open areas, often at the water's edge or in shallow water near 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 *Internationally important sites:* • Eighty Mile Beach • Roebuck Bay	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 *Internationally important sites:* • Eighty Mile Beach • Roebuck Bay	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	

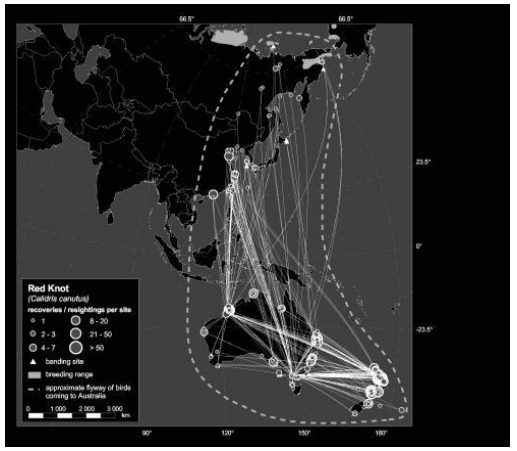
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Species	Presence in NWMR	Roosting habitat	Foraging habitat	Diet	Migration From Minton *et al.* (2006)
Grey-tailed tattler	Widespread from Houtman Abrolhos and the mainland adjacent to the Kimberley *Internationally important sites:* • Barrow Island • Roebuck Bay • Eighty Mile Beach • Lacepede Islands	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	*Widespread, internationally important sites:* • Eighty Mile Beach • Roebuck Bay • Broome • Port Hedland Saltworks	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	

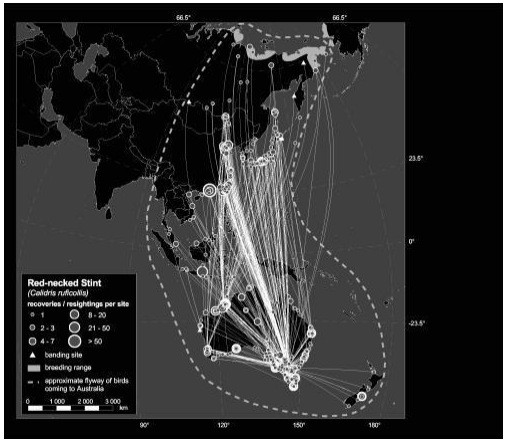
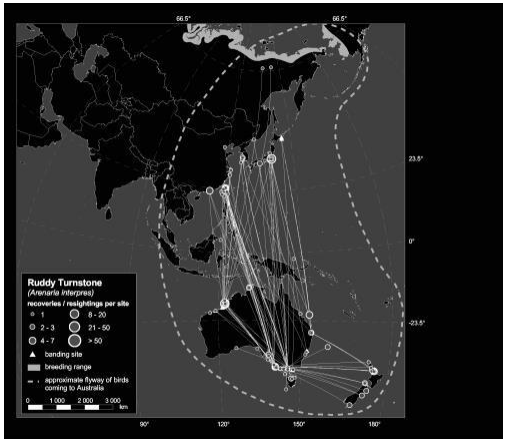
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Species	Presence in NWMR	Roosting habitat	Foraging habitat	Diet	Migration From Minton *et al.* (2006)
Oriental plover	Most records are along the north-western coast between Exmouth Gulf and Derby in WA *Internationally important sites:* • Dampier Saltworks • Port Hedland Saltworks • Eighty Mile Beach • Roebuck Bay	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 and crickets	Not available
Oriental pratincole	Widespread along the coasts of the Pilbara and Kimberley *Internationally important sites:* • Eighty Mile Beach • Roebuck Plains	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

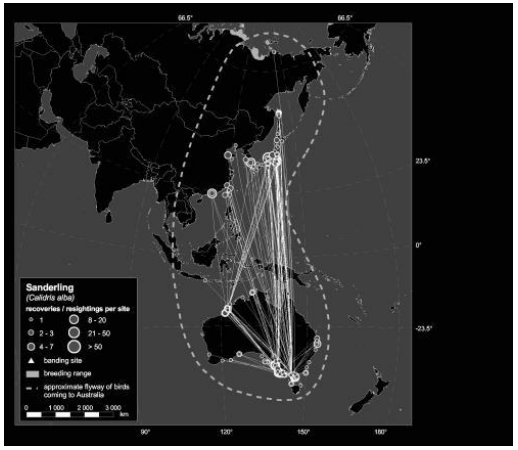
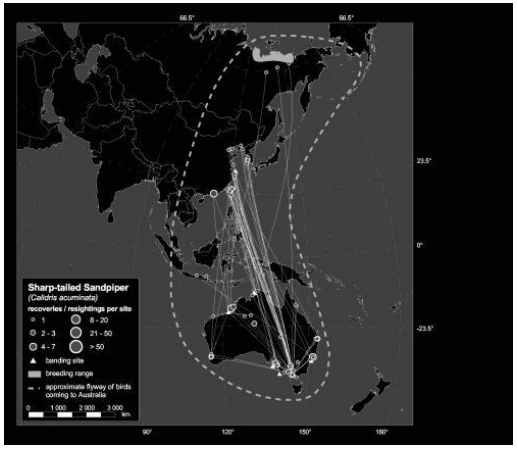
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Species	Presence in NWMR	Roosting habitat	Foraging habitat	Diet	Migration From Minton *et al.* (2006)
Pacific golden plover	Widespread along the coasts of the Pilbara and Kimberley *Nationally important site:* • Eighty Mile Beach	Sandy beaches and spits, rocky points, islets, exposed reef, occasionally mangrove and saltmarsh vegetation, beach-cast 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 *Internationally important sites:* • Eighty Mile Beach • Roebuck Bay	Sandy beaches, spits and islets, and mudflats near feeding grounds	Soft substrate near the water edge, including intertidal mudflats and sandflats exposed by low tide	Worms, bivalves, gastropods, crustaceans and echinoderms	

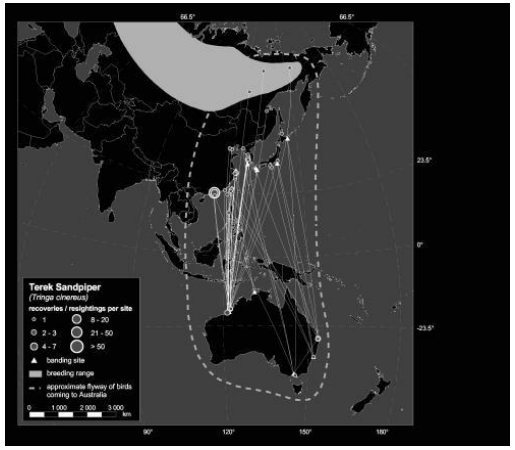
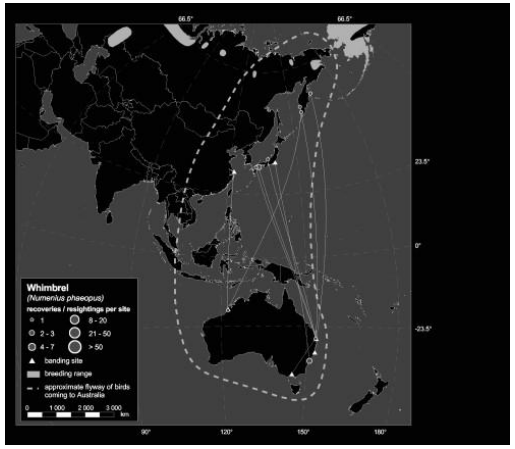
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Species	Presence in NWMR	Roosting habitat	Foraging habitat	Diet	Migration From Minton *et al.* (2006)
Red-necked stint	Widespread in coastal areas across Australia *Internationally important sites:* • Barrow Island • Port Hedland Saltworks • Eighty Mile Beach • Roebuck Bay	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 *Internationally important sites:* • Barrow Island • Eighty Mile Beach • Roebuck Bay • Lacepede Islands	Beaches above the tideline, among rocks, shells, beach-cast 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 across most of the NWMR coast as far east as Derby *Internationally important sites:* • Eighty Mile Beach • Roebuck Bay	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 the Pilbara to Kimberley *Internationally important site:* • Port Hedlands Saltworks • Eighty Mile Beach	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	

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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 *Internationally important sites:* • Eighty Mile Beach • Roebuck Bay	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 *Internationally important site:* • Roebuck Bay	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 (such as small fish, little tern chicks)	

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Table 9-5: 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 *Internationally important sites:* • Roebuck Bay • Port Hedland saltworks	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 *Internationally important sites:* • Roebuck Plains • Roebuck Bay • Anna Plains • Derby Sewage Ponds • Parry Floodplain	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 *Internationally important sites:* • Eighty Mile Beach • Roebuck Bay	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

9.4 Other marine birds in the NWMR

Table 9-6 summarises species descriptions for high occurrence key other marine bird species.

Table 9-6: Species summary for high occurrence key other marine bird species

Species	NWMR presence	Predominant feeding behaviour	Diet
Fork-tailed swift	Non-breeding: Oct to 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 1,000 birds	Insectivorous
Osprey	Breeding: April to February, though depends on latitude; NWMR individuals breeding early in the season compared to the SWMR Non-breeding: Remain in breeding territories Continuous distribution of the species around the coast except for a possible gap at Eighty Mile Beach	Hover momentarily 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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10. THREATENED AND MIGRATORY SPECIES' SEASONAL PRESENCE

Seasonal sensitivity for key threatened and migratory species in the NWMR and applicable to Woodside activities are presented in Table 10-1. The timing presented is displayed as a broad representation for the NWMR, with location specific seasonality presented within Environment Plans (EPs).

Table 10-1: Seasonal sensitivity of key threatened and migratory species in the NWMR

Species	January	February	March	April	May	June	July	August	September	October	November	December
Fishes, sharks and rays												
Whale shark – foraging (northward from Ningaloo) Whale shark foraging northward from Ningaloo in Spring[1] Migration along the north coast of WA also known to occur between July and November[2] Potential presence of whale sharks year-round at Ningaloo[3]												
Whale shark – foraging (high density prey, Ningaloo Reef) Whale shark foraging (high density prey) Ningaloo April to June, Autumn[1] March to July[2] Potential presence of whale sharks year-round at Ningaloo[3]												
Dwarf sawfish – reproduction[1] Potential to occur all seasons												
Dwarf sawfish – foraging[1] Potential to occur all seasons												
Largetooth (freshwater) sawfish – reproduction (pupping)[1] Pupping occurs from January to May												
Largetooth (freshwater) sawfish – foraging[1]												
Green sawfish (reproduction)[1]												
Green sawfish (foraging)[1]												

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Species	January	February	March	April	May	June	July	August	September	October	November	December
Marine reptiles – marine turtle nesting [note, hatchling emergence is generally six to eight weeks after nesting activity]												
Green turtle												
Ashmore Reef stock (G-AR)[1, 4] Mating occurs September to November Nesting occurs year round (peak December to January) Hatching September to May												
Scott Reef-Browse Island stock (G-ScBr)[1, 4] Mating: October Nesting: November to March (peak January to February) Hatching: Peak March to April												
NWS stock (G-NWS)[1, 4] Mating: September to December Nesting: November to March (peak December to February) Hatching: January to May (peak February to March)												
Hawksbill turtle												
WA stock (H-WA)[1, 4] Mating: Unknown Nesting: November to March (peak January) Hatching: January to May												
Flatback turtle												
Cape Domett stock (F-CD)[1, 4] Mating: year round Nesting: all year (peak August to September) Hatching: all year												
South-west Kimberley stock (F-swKim)[1, 4] Mating: year round Nesting: all year (peak December to January) Hatching: all year												

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Species	January	February	March	April	May	June	July	August	September	October	November	December
Pilbara stock (F-Pil)[1, 4] Mating: September to January Nesting: October to March (peak November to January) Hatching: February to March												
Unknown genetic stock, Kimberley, WA[1, 4] May to July												
Loggerhead turtle												
WA stock (LH-WA)[1, 4] Mating: Unknown Nesting: November to March (peak January) Hatching: January to May												
Olive ridley turtle												
Unknown genetic stock, Kimberley, WA[1, 4] May to July												
Cetaceans												
Fin whale[5] Fin whale presence NWMR May to October Migrating north from Cape Leeuwin (SWMR) May to October Present offshore Dampier August to October												
Humpback whale – northern migration[6] Range June to September[1, 6, 14] Peak July to August[7]												
Humpback whale – southern migration[7] Range July to November. Peak August to October[6, 7, 8, 14]												
Humpback whale – reproduction (nursing, Kimberley coast)[8] Reproduction (nursing, Kimberley coast) Winter (June to August)[1] Breeding August to September[6, 14] Calves present off Kimberley in October[9]												

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Species	January	February	March	April	May	June	July	August	September	October	November	December
Omura's whale Limited data but sightings reported year round[9]												
Pygmy blue whale – northern migration[10] Pygmy blue whale northern migration April to August[1, 6, 11, 12] Peak April to July[13] From the Perth Canyon (April/May) to the NWS (June/July) [13]												
Pygmy blue whale – southern migration[11] Migration October to December, possibly into January[1, 6] Peak November to December[13]												
Southern right whale (calving/presence in NWMR)[12] Calving and migratory presence in Exmouth Gulf (NWMR) June to September[1] Peak: July and August[1]												
Seabirds (high occurrence seabirds with designated BIAs[15]												
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												
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 January and March (protracted through to October at Ashmore Reef)												

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Species	January	February	March	April	May	June	July	August	September	October	November	December
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												
Key												
	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 the NWMR											

1. *Biologically Important Areas (DCCEEW 2025b)*
2. *Threatened Species Scientific Committee (2015d)*
3. *Norman* et al. *(2017)*
4. *Recovery Plan for Marine Turtles in Australia (Commonwealth of Australia 2017)*
5. *Aulich* et al. *(2022)*
6. *DSEWPaC (2012a)*
7. *Salgado Kent* et al. *(2012)*
8. *Irvine and Salgado Kent (2019)*
9. *Thums* et al. *(2018)*
10. *Cerchio* et al. *(2019)*
11. *Commonwealth of Australia (2015a)*
12. *McCauley* et al. *(2018)*
13. *Thums* et al. *(2022)*
14. *Threatened Species Scientific Committee (2015b)*
15. *All seabird seasonality information derived from BIA metadata, scientific publications and expert opinion (Worley 2024)*

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11. KEY ECOLOGICAL FEATURES

KEFs are elements of the Commonwealth marine environment that are considered important for a marine region's biodiversity or ecosystem function and integrity. The Australian Government has identified KEFs 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; for example, a predator, or 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 that 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, detailed in Table 11-1. Twelve KEFs are designated within the SWMR and eight within the NMR, detailed in (Appendix A).

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Table 11-1 details the 13 KEFs within the NWMR as identified by the PMST (Appendix A) and are displayed in Figure 11-1.

Table 11-1: Key ecological features within the NWMR

KEF name	Woodside activity area			Values[1]	Description
	Browse	*NWS/ Scarborough*	*North West Cape*		
Ancient coastline at 125 m depth contour	✓	✓	✓	Unique seafloor feature with ecological properties of regional significance. Provides areas of hard substrate and may provide sites for higher diversity and enhanced species richness relative to surrounding areas of predominantly soft sediment.	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. 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). 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. 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 more 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).
Ashmore Reef and Cartier Island and surrounding Commonwealth waters	✓	-	-	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 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 km². 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.

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KEF name	Woodside activity area			Values[1]	Description
	Browse	*NWS/ Scarborough*	*North West Cape*		
Carbonate bank and terrace system of the Sahul Shelf	✓	-	-	Unique seafloor feature with ecological properties of regional significance. Regionally important because of their role in enhancing biodiversity and local productivity relative to their surrounds. The carbonate banks and terraces provide areas of hard substrate in an otherwise soft sediment environment, and are important for sessile species.	The carbonate banks and terrace system of the Sahul Shelf are in the western Joseph Bonaparte Gulf and 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. The bank and terrace system of the Van Diemen Rise covers about 31,278 km² and forms part of the larger system associated with the Sahul Banks to the north and Londonderry Rise to the east. The feature is characterised by terrace, banks, channels and valleys (DSEWPaC 2012c). The banks, ridges and terraces of the Van Diemen Rise are raised geomorphic features with relatively high proportions of hard substrate that support sponge and octocoral gardens. These, in turn, provide habitat to other epifauna, by providing structure in an otherwise flat environment (Przeslawski *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).
Canyons linking the Argo Abyssal Plain and Scott Plateau	-	✓	-	Facilitates nutrient upwelling, creating enhanced productivity and encouraging diverse aggregations of marine life. Likely to be important due to their historical association with sperm whale aggregations.	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).
Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula	-	-	✓	Unique seafloor feature with ecological properties of regional significance. 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.	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, seabirds and large predatory fish are known to occur in this area.

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KEF name	Woodside activity area			Values[1]	Description
	Browse	*NWS/ Scarborough*	*North West Cape*		
Commonwealth waters adjacent to Ningaloo Reef	-	-	✓	High productivity and diverse aggregations of marine life. The Commonwealth waters adjacent to Ningaloo Reef and associated canyons and 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.	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, seabirds and large predatory fish are known to occur in this area (DSEWPaC 2012a). 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 12.5.
Continental slope demersal fish communities	✓	✓	✓	High biodiversity of demersal fish assemblages, including high levels of endemism.	The diversity of demersal fish assemblages on the continental slope in the Timor Province, the Northwest Transition and the Northwest 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. Demersal fish species occupy two distinct demersal biomes associated with the upper slope (225 to 500 m water depths) and the mid-slope (750 to 1,000 m). Although poorly known, it is suggested 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, toothed whales and large squid (Brewer *et al.* 2007). Pelagic production is phytoplankton-based, with hotspots around oceanic reefs and islands (Brewer *et al.* 2007)

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KEF name	Woodside activity area			Values[1]	Description
	Browse	***NWS/ Scarborough***	***North West Cape***		
Exmouth Plateau	-	✓	✓	Unique seafloor feature with ecological properties of regional significance, which apply to both benthic and pelagic habitats. Likely to be an important area of biodiversity as it provides an extended area offshore for communities adapted to depths of about 1,000 m.	The Exmouth Plateau is a large, mid-slope, continental margin plateau that lies off the north-west coast of Australia. It ranges in depth from about 500 to more than 5,000 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 generating internal tides, both of which may subsequently contribute to the upwelling of deeper, nutrient-rich waters nearer the surface (Brewer *et al.* 2007). Satellite observations suggest productivity is enhanced along the northern and southern boundaries of the plateau (Brewer *et al.* 2007). Sediments on the plateau suggest 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.
Glomar Shoal	-	✓	-	An area of high productivity and aggregations of marine life, including commercial and recreational fish species.	Glomar Shoal is a submerged littoral feature about 150 km north of Dampier on the Rowley shelf at depths of 33 to 77 m (Falkner *et al.* 2009). Studies by Abdul Wahab *et al.* (2018) found 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 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 the shoal is likely to be an area of high productivity.

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KEF name	Woodside activity area			Values[1]	Description
	Browse	*NWS/ Scarborough*	*North West Cape*		
Mermaid Reef and Commonwealth waters surrounding Rowley Shoals	-	✓	-	Regionally important in supporting high species richness, higher productivity and aggregations of marine life.	The Mermaid Reef and Commonwealth waters surrounding the KEF is adjacent to the 3 nm State waters limit surrounding Clerke Reef and Imperieuse Reef, and include the Mermaid Reef Marine Park as described in Section 12. 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).
Pinnacles of the Bonaparte Basin	✓	-	-	Unique seafloor feature with ecological properties of regional significance. Provide areas of hard substrate in an otherwise soft sediment environment and so are important for sessile species. Recognised as a biodiversity hotspot for sponges. The KEF is within both the NWMR and NMR.	The Pinnacles of the Bonaparte Basin provide areas of hard substrate in an otherwise relatively featureless environment, the pinnacles are likely to support a high number of species, although a better understanding of the species richness and diversity associated with these structures is required (DSEWPaC 2012a; 2012c). Covering >520 km² within the Bonaparte Basin, this feature contains the largest concentration of pinnacles along the Australian margin. The pinnacles of the Bonaparte Basin are thought to be the eroded remnants of underlying strata; it is likely the vertical walls generate local upwelling of nutrient-rich water, leading to phytoplankton productivity that attracts aggregations of planktivorous and predatory fish, seabirds and foraging turtles (DSEWPaC 2012a; 2012c).
Seringapatam Reef and the Commonwealth waters in the Scott Reef complex	✓	-	-	Support diverse aggregations of marine life, have high primary productivity relative to other parts of the region, are relatively pristine and have high species richness, which apply to both the benthic and pelagic habitats within the feature.	Seringapatam Reef and the Commonwealth waters in the Scott Reef complex are regionally important in supporting the diverse aggregations of marine life, high primary productivity and high species richness associated with the reefs themselves. As two of the few offshore reefs in the north-west, they provide an important biophysical environment in the region (DSEWPaC 2012a).

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KEF name	Woodside activity area			Values[1]	Description
	Browse	***NWS/ Scarborough***	***North West Cape***		
Wallaby Saddle	-	-	✓	High productivity and aggregations of marine life, representing almost the entire area of this type of geomorphic feature in the NWMR. It is a unique habitat that neither occurs anywhere else nearby (within hundreds of kilometres) nor with as large an area (Falkner *et al.* 2009).	The Wallaby Saddle may be an area of enhanced productivity. Historical whaling records provide evidence of sperm whale aggregations in the area of the Wallaby Saddle, possibly due to the enhanced productivity of the area and aggregations of baitfish (DSEWPaC 2012a).

1. Values description sourced from Marine Bioregional Plan for the North-west Marine Region (DSEWPaC 2012a) and DCCEEW SPRAT database.

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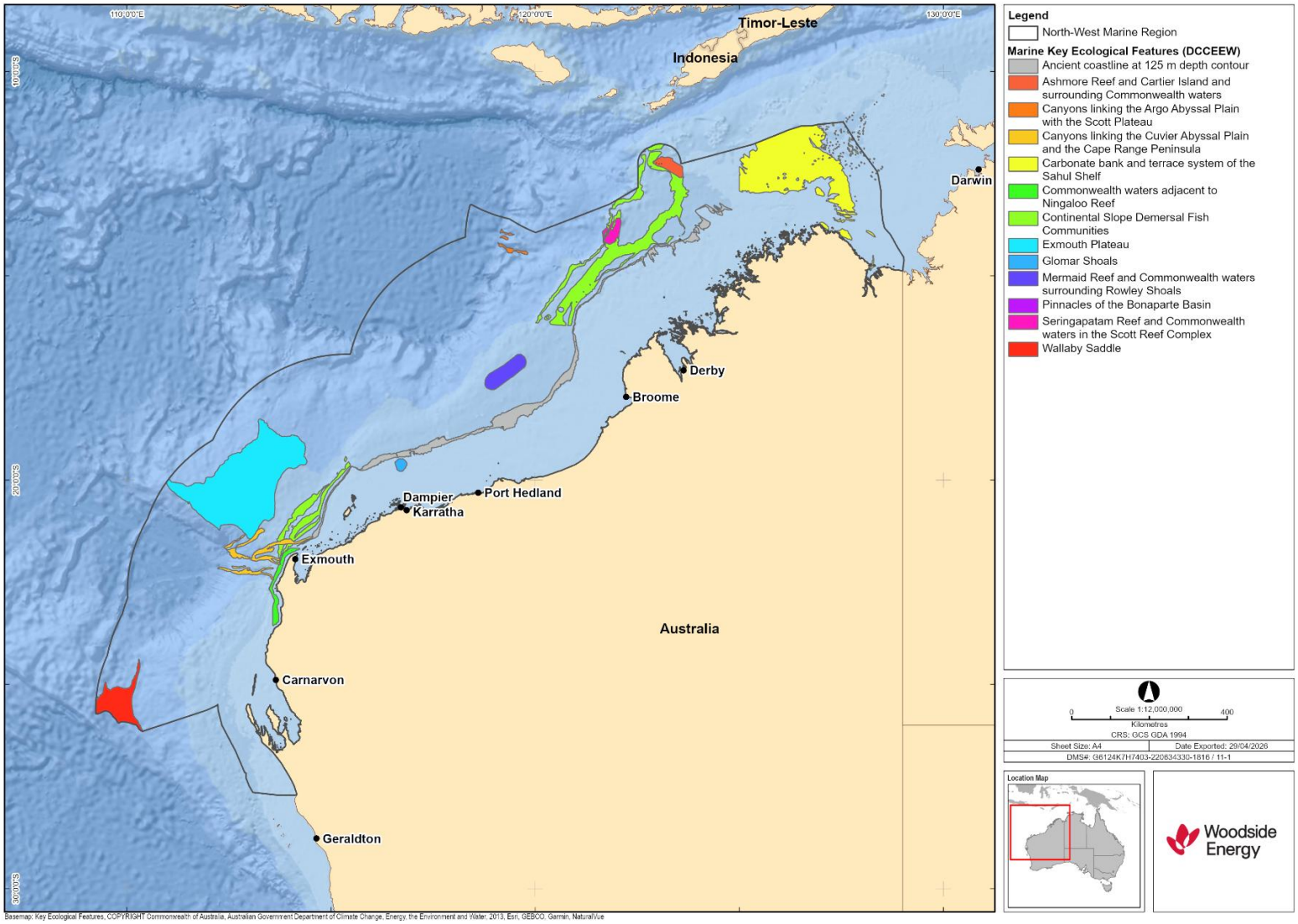


Figure 11-1: Key ecological features within the NWMR

Source: DCCEEW (2024b)

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12. PROTECTED AREAS

12.1 Regional context

Protected areas include World Heritage properties, National Heritage places, wetlands of international importance, AMPs, State marine parks and reserves, threatened ecological communities and the Australian Whale Sanctuary. The PMST Reports (Appendix A) show 30 protected areas in the NWMR, 19 in the SWMR and nine in the NMR.

12.2 World Heritage properties

World Heritage listings are sites of outstanding universal value and meet at least ten 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 13.

The list of Australia's World Heritage Properties and the PMST reports (Appendix A) show two World Heritage properties classed as natural within the NWMR (Table 12-4), and one World Heritage property classed as cultural, the Murujuga Cultural Landscape (MCL), which is described in Section 12.2.1. One World Heritage property is within the SWMR and one in the NMR (Appendix A).

Table 12-4 describes the World Heritage properties within the NWMR.

12.2.1 Murujuga Cultural Landscape World Heritage property

The MCL, within the NWMR (Figure 12-2), is globally significant and is recognised on Australia's National Heritage list and United Nations Educational, Scientific and Cultural Organization's (UNESCO) World Heritage list. The landscape encompasses one of the largest, densest and most diverse collections of rock art in the world. The area is estimated to contain over a million engravings (petroglyphs) demonstrating a broad range of styles and subjects. The landscape also boasts various archaeological sites, including 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 significant places are linked through the stories, knowledge and customs maintained by Traditional Custodians of Murujuga.

12.2.1.1 UNESCO World Heritage listing

UNESCO "seeks to encourage the identification, protection and preservation of cultural and natural heritage around the world considered to be of outstanding value to humanity" via the World Heritage List, established under the World Heritage Convention 1972 (UNESCO 2024).

The MCL was nominated by the Federal Department of the Environment and Energy in 2020 and was inscribed on the UNESCO World Heritage List on 11 July 2025. This property is comprised of 99,881 ha, includes 8,356 ha of the Burrup Peninsula, 42 islands of the Dampier Archipelago and adjacent marine areas.

The outstanding universal values of the MCL World Heritage property include the following:

- Petroglyphs demonstrate artistic achievement assembled over 50,000 years. They are visually outstanding, demonstrate technical skill, and represent multiple phases in the development of regional and local styles.
- The Murujuga Cultural Landscape bears testimony to the living cultural traditions of Ngarda-Ngarli and the spiritual relationship between people and landscape that is at least 50,000 years old.
- The Murujuga Cultural Landscape is an outstanding example of human interaction with the environment over at least 50,000 years. The landscape is patterned by this long-term presence persisting through irreversible environmental and climatic changes.

The MCL is inscribed under Cultural Criterion i, iii and v, which reflect the outstanding universal values.

More information about the MCL can be found on the publicly available UNESCO World Heritage Listing[17].

[17] https://whc.unesco.org/en/list/1709

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The WA DBCA states “World Heritage listing also brings a commitment at local, state and national levels to protect and manage the property for present and future generations.” This affirms that with appropriate management, the World Heritage listing and industry could occur in parallel, as long as there are no significant impacts on World Heritage values (DBCA 2019).

12.2.1.2 Condition of Murujuga Cultural Landscape

The identified condition of the MCL has been assessed from publicly available sources:

The following is an excerpt from the World Heritage Submission for MCL (Murujuga Aboriginal Corporation (MAC), DBCA, DoEE 2020) which noted, with regards to the Statements of Integrity and/or Authenticity:

> “Aboriginal cultural landscapes are living landscapes that change as time progresses, where oral tradition is the canon of proof and where changing practices of embodied experience with landscapes grow from generation to generation (Andrews and Buggey 2008).
>
> “In the context of Aboriginal cultural landscapes, any test of authenticity must recognise, expect, and endorse changes (Andrews and Buggey 2008). The archaeological and anthropological evidence for Murujuga is well preserved, with a high degree of authenticity. The exceptionally well-preserved cultural values of Murujuga can be found across an area of more than 37,000 ha, comprising the majority of the Burrup Peninsula, as well as the surrounding islands of the Dampier Archipelago.
>
> “The petroglyphs of Murujuga have been made on the exceptionally hard, dark volcanic rock using stone tool technology. Methods of production included pecking, abrasion, incision and bas-relief. When first produced the very pale grey petroglyphs would have contrasted starkly with the dark red-brown cortex of the rock. With subsequent patination and weathering, this contrast gradually reduces…
>
> “Murujuga has a high level of integrity and received enhanced protection and management following its National Heritage listing in 2007. A detailed land-use impact study of Murujuga documented that all 40 islands included in the Dampier Archipelago (including Burrup Peninsula) National Heritage place and approximately 85 per cent of the Burrup Peninsula, retain extremely high integrity (McDonald and Veth 2006), and contain all the attributes that constitute the potential outstanding universal value of the place…
>
> “Within the National Heritage listed area, the petroglyphs are whole and intact (Jo McDonald Cultural Heritage Management 2009; 2011). Although the entirety of Murujuga has not been surveyed and recorded, there are thousands of known sites which demonstrate the potential outstanding universal value of the Murujuga Cultural Landscape…
>
> “While industrial development visually compromises some areas of the southern section of the Burrup Peninsula, the topography, with its deeply dissected gorges, valleys and scree slopes, means that a large portion of Murujuga, including the vast majority of its islands retain high visual integrity (Jo McDonald Cultural Heritage Management 2011; Australian Heritage Council 2012). In summary, the Murujuga Cultural Landscape is an intact and representative example of one of the most significant concentrations of human artistic creativity in the world, which survives through the continuity of Ngurra-ra Ngarli cultural and social practices and active management.”

A report titled The Potential Outstanding Universal Value of the Dampier Archipelago Site and Threats to that Site – A report by the Australian Heritage Council to the Minister for Sustainability, Environment, Water, Population and Communities (Australian Heritage Council 2012), found that:

> “It is clear that the undisturbed area within the boundaries of the National Heritage listed place is complete and whole, notwithstanding the proximity of industry.”

The Australian Heritage Database listing for the Nationally Heritage Listed Dampier Archipelago (including Burrup Peninsula) states:

> “Condition: Parts of the area, particularly the Burrup Peninsula, East Intercourse Island and Mid East Intercourse Island, have been subject to industrial development and other impacts such as the construction of towns and work camps. A land use impact assessment, undertaken using aerial photographs from August 2004, estimates that high levels of impact have occurred on 1,643 ha (or 16.4 square kilometres) on the Burrup Peninsula (McDonald and Veth 2006). A high level of impact in these areas on the Burrup Peninsula has resulted in the destruction of archaeological material and in some cases the relocation of engravings and other stone features. Despite this, the natural and cultural heritage in Dampier Archipelago and its surrounding waters is in good condition” (DCCEEW 2007).

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12.2.1.3 Murujuga rock art monitoring

In 2019, the WA Department of Water and Environmental Regulation (DWER) released the Murujuga Rock Art Strategy (MRAS), a "monitoring, analysis and decision-making framework to protect Aboriginal rock art located on Murujuga (the Dampier Archipelago and Burrup Peninsula)" (DWER 2019). The MRAS notes "This strategy builds on the previous work on Murujuga to deliver a scientifically rigorous approach to monitoring, analysis and management that will provide an appropriate level of protection to the rock art. It describes a risk-based approach for the management of impacts to the rock art that is consistent with the State Government's responsibilities under the *Environmental Protection Act 1986* (EP Act) and provides the monitoring and analysis to determine whether accelerated change is occurring to the petroglyphs" (DWER 2019).

The results from these studies will guide management and protection of the rock art" (Government of Western Australia 2023). The MRAS states that "The successful implementation of the management framework to protect the rock art from anthropogenic emissions will require…a monitoring program that is appropriately designed and implemented to take the necessary measurements, to analyse the data and to report on the integrity or condition of the rock art and change in that condition" (DWER 2019). As described in the MRAS, "The Western Australian Government in partnership with MAC and in consultation with international and national experts in relevant disciplines and the Murujuga Rock Art Stakeholder Reference Group, will develop and implement a revised long-term Murujuga Rock Art Monitoring Program" (DWER 2019).

The Murujuga Rock Art Monitoring Program (MRAMP) is a five-year program run by MAC and DWER, is described as a "best practice monitoring and analysis program" by the Government of Western Australia, which "will provide reliable information about changes and trends in the condition of the rock art and whether the rock art is showing signs of accelerated change. In 2025, MRAMP published interim environmental quality criteria that set the initial levels of airborne substances that are considered to not cause harm to rock art (Curtin University 2025). Interim standards published by MRAMP indicated that activities in the region currently remain below this value. Interim Environmental Quality Criteria Guidelines exist to guide an ongoing management approach under the MRAMP framework for the region.

More information about the MRAS and MRAMP can be found on the Government of Western Australia publicly available website.[18]

12.2.1.4 *Aboriginal and Torres Strait Islander Heritage Protection Act* section 10 (Murujuga) declaration

The (Murujuga) Declaration 2025 was issued on 12 September 2025 under section 10 of the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (Commonwealth) to provide additional Commonwealth protection for areas of the MCL, specifically on the Burrup Peninsula and Dampier Archipelago (DCCEEW 2025f). The declaration comes into force 12 months after its issue (12 September 2026).

The declaration allows the Minister for Environment and Water (the Minister) to intervene when an area of Aboriginal significance is considered under threat of injury or desecration. The Minister determined that Murujuga is a *significant Aboriginal area* and is subject to a range of threats, including those arising from existing and proposed industrial development, access arrangements, and indirect impacts on heritage values. The original application included a broader area for protection; a partial declaration was issued covering certain defined *declared areas.* These declared areas include Woodside-operated onshore leases. The prohibitions in the declaration do not apply where a person has prior written agreement from MAC to undertake certain activities (DCCEEW 2025f).

The statement about making the section 10 (Murujuga) Declaration is available on DCCEEW's webpage.[19]

12.3 National and Commonwealth Heritage places

The National Heritage List (DCCEEW 2026a) is Australia's list of natural, historic and Indigenous places of outstanding significance to the nation. The National Heritage List Spatial Database (DCCEEW 2026e) describes the place name, class (Indigenous, natural, historic) and status of the heritage places.

[18] Murujuga rock art strategy

[19] Statement about the making of a partial declaration under section 10 of the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (Commonwealth) in relation to parts of Murujuga, Western Australia

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Commonwealth Heritage places are a collection of sites recognised for their Indigenous, historical or natural values and are owned or controlled by the Australian Government.

A search of the National Heritage List Spatial Database and the PMST reports (Appendix A) identified six National Heritage places in the NWMR (Table 12-4), four in the SWMR and two in the NMR (Appendix A). A search of the Commonwealth Heritage List identified seven Commonwealth Heritage places within the NWMR (Table 12-4) and six within the SWMR (Appendix A). Four Commonwealth Heritage places are listed within the NMR (Appendix A).

Table 12-4 describes National and Commonwealth Heritage places within the NWMR.

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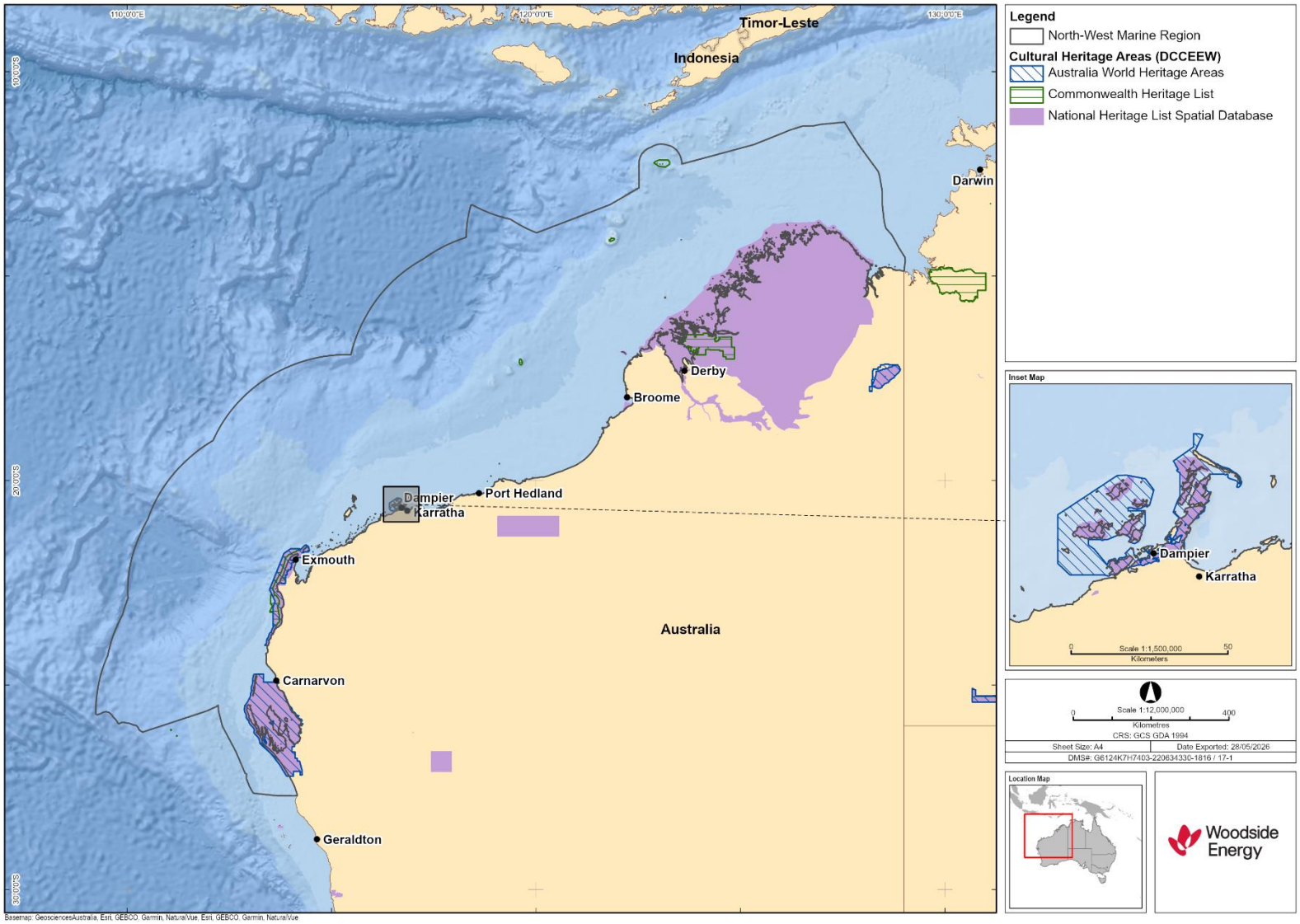


Figure 12-1: World Heritage properties and National and Commonwealth Heritage listed places in the NWMR

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12.4 Wetlands of international importance (listed under the Ramsar Convention)

Australia has 65 Ramsar wetlands that cover >8.3 million hectares. 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 12-4). There are five Ramsar sites within the SWMR (Appendix A) and two within the NMR in the PMST report (Appendix A).

Table 12-4 describes Ramsar wetlands within the NWMR.

12.5 Australian Marine Parks

AMPs, proclaimed under the EPBC Act in 2007 and 2013, are 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) identified 16 AMPs within the NWMR, ten within the SWMR and eight within the NMR.

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 12-2) (Commonwealth of Australia 2021). Section 12.5.2 describes these further.

Table 12-1 describes the values of all marine parks identified in the North-west Marine Network management plans.

12.5.1 North-west Marine Parks Network

Table 12-1 describes AMPs within the North-west Marine Park Network, according to the North-west Marine Parks Network Management Plan 2018 (Director of National Parks (DNP) 2018a).

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Table 12-1: Summary of Australian Marine Parks 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)	**Description** The Argo–Rowley Terrace Marine Park is about 270 km north-west of Broome, WA, and extends to the limit of Australia's EEZ. This AMP covers an area of 146,003 km² and water depths between 220 m and 6,000 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. The marine park was proclaimed under the EPBC Act on 14 December 2013 and renamed Argo-Rowley Terrace Marine Park on 9 October 2017.
		Natural values The marine park includes ecosystems representative of: • Northwest Transition – an area of shelf break, continental slope and most of the Argo Abyssal Plain; key topographic features include Mermaid, Clerke and Imperieuse reefs • 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. KEFs are: • canyons linking the Argo Abyssal Plain with the Scott Plateau • Mermaid Reef and Commonwealth waters surrounding Rowley Shoals. 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. BIAs within the marine park include resting and breeding habitat for seabirds and a migratory pathway for the pygmy blue whale.
		Cultural values 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, limited information regarding the cultural significance of this marine park is currently available (DNP 2018a).
		Heritage values 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 *Historic Shipwrecks Act 1976*: Alfred (wrecked in 1908) and Pelsart (wrecked in 1908).
		Social and economic values Socioeconomic values of this marine park include commercial fishing and mining.

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North-west Marine Park Network	IUCN zones	Description and values
Ashmore Reef Marine Park	Sanctuary (Ia) Recreational Use (IV)	**Description** The Ashmore Reef Marine Park is about 630 km north of Broome and 110 km south of the Indonesian island of Roti. The marine park is 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 km² and water depths from less than 15 m to 500 m. The marine park was originally proclaimed under the *National Parks and Wildlife Conservation Act 1975* on 16 August 1983 as the Ashmore Reef National Nature Reserve, and proclaimed under the EPBC Act on 14 December 2013 and renamed Ashmore Reef Marine Park on 9 October 2017.
		Natural values 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 5,920 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 WA coast. This marine park supports a range of species listed under the EPBC Act. BIAs 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 dugongs, 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 dugongs, and has the highest diversity of hermatypic (reef-building) corals on the WA coast. It is known for its abundance and diversity of sea snakes, although populations at Ashmore Reef have been in decline since 1998. KEFs are: • Ashmore Reef and Cartier Island and surrounding Commonwealth waters • continental slope demersal fish communities – an area of high-diversity demersal fish assemblages.
		Cultural values 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.
		Heritage values Ashmore Reef is a Commonwealth Heritage listed site, meeting criteria A, B and C.

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North-west Marine Park Network	IUCN zones	Description and values
		Social and economic values Tourism, recreation and scientific research are important activities in this marine park.
Carnarvon Canyon Marine Park	Habitat Protection (IV)	**Description** The Carnarvon Canyon Marine Park is about 300 km north-west of Carnarvon. It covers an area of 6,177 km² and a water depth range of 1,500 to 6,000 m. The marine park was proclaimed under the EPBC Act on 14 December 2013 and renamed Carnarvon Canyon Marine Park on 9 October 2017.
		Natural values 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, deepwater 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, such as holothurians, polychaetes and sea-pens. This marine park supports a range of species listed under the EPBC Act.
		Cultural values 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.
		Heritage values No International, Commonwealth or National Heritage listings apply to the marine park.
		Social and economic values Commercial fishing is an important activity in the marine park.
Cartier Island Marine Park	Sanctuary (Ia)	**Description** The Cartier Island Marine Park is about 45 km south-east of Ashmore Reef Marine Park and 610 km north of Broome, WA. Both marine parks are in Australia's External Territory of Ashmore and Cartier islands and within an area subject to an MoU between Indonesia and Australia, known as the MoU Box. The Cartier Island Marine Park covers an area of 172 km² and water depths from less than 15 m to 500 m. The marine park was originally proclaimed under the *National Parks and Wildlife Conservation Act* on 21 June 2000 as the Cartier Island Marine Reserve. It was then proclaimed under the EPBC Act on 14 December 2013 and renamed Cartier Island Marine Park on 9 October 2017.

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North-west Marine Park Network	IUCN zones	Description and values
		Natural values This marine park includes ecosystems representative of the Timor Province – a bioregion with depths ranging from about 200 m near the shelf break to 5,920 m over the Argo Abyssal Plain. The reefs and islands of this bioregion are regarded as biodiversity hotspots. KEFs are: • Ashmore Reef and Cartier Island and surrounding Commonwealth waters • continental slope demersal fish communities. There are two distinct demersal fish communities of the continental slope: one on the upper slope, the other mid slope. This marine park includes an unvegetated sand island (Cartier Island), mature reef flat, a small, submerged pinnacle (Wave Governor Bank), and two shallow pools 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. This marine park supports a range of species listed under the EPBC Act. BIAs 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. This marine park is internationally significant for its abundance and diversity of sea snakes.
		Cultural values 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).
		Heritage values This marine park contains one known shipwreck listed under the *Historic Shipwrecks Act:* the Ann Millicent (wrecked in 1888). No International or National Heritage listings apply to this marine park.
		Social and economic values Scientific research is an important activity in this marine park.
Dampier Marine Park	National Park (II) Habitat Protection (IV)	**Description** The Dampier Marine Park is about 10 km north-east of Cape Lambert and 40 km from Dampier, extending from the WA State water boundary. This marine park covers an area of 1,252 km² and a water depth range between less than 15 m and 70 m. The marine park was proclaimed under the EPBC Act on 14 December 2013 and renamed Dampier Marine Park on 9 October 2017.

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North-west Marine Park Network	IUCN zones	Description and values
	Multiple Use (VI)	**Natural values** 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. BIAs within this marine park include breeding and foraging habitat for seabirds, internesting habitat for marine turtles, and a migratory pathway for humpback whales.
		Cultural values 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 peoples 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.
		Heritage values No International, Commonwealth or National Heritage listings apply to this marine park, but the marine park is about 10 km north of the Dampier Archipelago (including Burrup Peninsula) National Heritage listing, which has significant Indigenous heritage values. including rock art sites.
		Social and economic values Port activities, commercial fishing and recreation, including fishing, are important activities in this marine park.
Eighty Mile Beach Marine Park	Multiple Use (VI)	**Description** The Eighty Mile Beach Marine Park is about 74 km north-east of Port Hedland, adjacent to the WA Eighty Mile Beach Marine Park. This marine park covers an area of 10,785 km² and water depth ranges between less than 15 m and 70 m. The marine park was proclaimed under the EPBC Act on 14 December 2013 and renamed Eighty Mile Beach Marine Park on 9 October 2017.
		Natural values 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. BIAs within this marine park include breeding, foraging and resting habitat for seabirds, internesting and nesting habitat for marine turtles, foraging, nursing and pupping habitat for sawfish, and a migratory pathway for humpback whales.

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North-west Marine Park Network	IUCN zones	Description and values
		Cultural values 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 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, dugongs, crabs and oysters. Access to Sea Country by families is important for cultural traditions, livelihoods and future socioeconomic development opportunities. 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. The Kimberley Land Council and the Yamatji Marlpa Aboriginal Corporation are the Native Title Representative Bodies for the Kimberley and Pilbara regions.
		Heritage values This marine park contains three known shipwrecks listed under the *Historic Shipwrecks Act:* Lorna Doone (wrecked in 1923), Nellie (wrecked in 1908) and Tifera (wrecked in 1923). No International, Commonwealth or National Heritage listings apply to the marine park.
		Social and economic values Tourism, commercial fishing, pearling and recreation are important activities in this marine park.
Gascoyne Marine Park	National Park (II) Habitat Protection (IV) Multiple Use (VI)	**Description** The Gascoyne Marine Park is about 20 km off the west coast of the Cape Range Peninsula, adjacent to the Ningaloo Reef Marine Park and the WA Ningaloo Marine Park, and extends to the limit of Australia's EEZ. This marine park covers an area of 81,766 km² and water depth varies between 15 m and 6,000 m. The marine park was proclaimed under the EPBC Act on 14 December 2013 and renamed Gascoyne Marine Park on 9 October 2017.

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North-west Marine Park Network	IUCN zones	Description and values
		Natural values This marine park includes ecosystems representative of: • Central Western Shelf Transition – continental shelf with water depths up to 100 m, and a significant transition zone between tropical and temperate species • 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 • Northwest Province – an area of continental slope comprising diverse and endemic fish communities. KEFs are: • canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula • Commonwealth waters adjacent to Ningaloo Reef • continental slope demersal fish communities • Exmouth Plateau. Ecosystems represented in this marine park are influenced by the interaction of the Leeuwin Current, Leeuwin Undercurrent and the Ningaloo Current. This marine park supports a range of species listed under the EPBC Act. BIAs 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.
		Cultural values 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.

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North-west Marine Park Network	IUCN zones	Description and values
		Heritage values *World Heritage* 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. *Commonwealth Heritage* 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. *National Heritage* The Ningaloo Coast meets the National Heritage listing criteria A, B, C, D, and F and is adjacent to the marine park. *Historic shipwrecks* The marine park contains more than five known shipwrecks listed under the *Historic Shipwrecks Act*.
		Social and economic values Commercial fishing, mining and recreation are important activities in this marine park.
Joseph Bonaparte Gulf Marine Park	Multiple Use Zone (VI) Special Purpose Zone (VI) (NMR only)	**Description** The Joseph Bonaparte Gulf Marine Park is about 15 km west of Wadeye, NT, and about 90 km north of Wyndham, WA, in the Joseph Bonaparte Gulf. It is adjacent to the WA North Kimberley Marine Park. This marine park covers an area of 8,597 km² and water depth ranges between less than 15 m and 100 m. The marine park was proclaimed under the EPBC Act on 14 December 2013 and renamed Joseph Bonaparte Gulf Marine Park on 9 October 2017.
		Natural values 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. The KEF 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. This marine park supports a range of species listed under the EPBC Act. BIAs within this marine park include foraging habitat for marine turtles and the Australian snubfin dolphin.

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North-west Marine Park Network	IUCN zones	Description and values
		Cultural values 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 Miriuwung, Gajerrong, Doolboong, Wardenybeng and Gija and Balangarra people have responsibilities for Sea Country in this marine park. They are represented by the following Prescribed Bodies Corporate: Miriuwung and Gajerrong Aboriginal Corporation and Balanggarra 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 NT's northern region and the Kimberley region, respectively.
		Heritage values No International, Commonwealth or National Heritage listings apply to this marine park, but this marine park is adjacent to the West Kimberley National Heritage place.
		Social and economic values Tourism, commercial fishing, mining and recreation, including fishing, are important activities in this marine park.
Kimberley Marine Park	Habitat Protection (IV) National Park (II) Multiple Use (VI)	**Description** The Kimberley Marine Park is about 100 km north of Broome, extending from the WA State water boundary north from the Lacepede Islands to the Holothuria Banks offshore from Cape Bougainville. This marine park is adjacent to the WA Lalang-garram/Camden Sound Marine Park and the North Kimberley Marine Park. This marine park covers an area of 74,469 km² and water depths from less than 15 m to 800 m. **The marine park was proclaimed under the EPBC Act on 14 December 2013 and renamed Kimberley Marine Park on 9 October 2017.**
		Natural values This marine park includes ecosystems representative of: • 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. • Northwest Shelf Transition – straddles the NWMR and NMR and in the north-west includes shelf break, continental slope and most 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. • Timor Province – water depths (of the bioregion) range from about 200 m near the shelf break to 5,920 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. KEFs are: • ancient coastline at the 125 m depth contour

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North-west Marine Park Network	IUCN zones	Description and values
		• continental slope demersal fish communities. This marine park supports a range of species listed under the EPBC Act. BIAs 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 dugongs, and foraging habitat for whale sharks.
		Cultural values 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 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 3,400 km² of their Sea Country 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. Staple foods of living cultural value include saltwater fish, turtles, dugongs, crabs and oysters. Access to Sea Country by families is important for cultural traditions, livelihoods and future socioeconomic development opportunities. The National Heritage listing for the West Kimberley recognises the following key cultural heritage values: • Wanjina Wunggurr cultural tradition, which incorporates many Sea Country cultural sites • log-raft maritime tradition, which involved using tides and currents to access warrurru (reefs) far offshore to fish • interactions with Makassan traders around sea foods over hundreds of years • important pearl resources that were used in traditional trade through the wunan and in contemporary commercial agreements. 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 all 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. 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. The Kimberley Land Council is the Native Title Representative Body for the Kimberley region.
		Heritage values This marine park contains more than 40 known shipwrecks listed under the *Historic Shipwrecks Act*. No International, Commonwealth or National Heritage listings apply to the marine park, but the marine park is adjacent to the National Heritage place of the West Kimberley.

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North-west Marine Park Network	IUCN zones	Description and values
		Social and economic values Tourism, commercial fishing, mining, recreation, including fishing, and traditional use are important activities in this marine park.
Mermaid Reef Marine Park	National Park (II)	**Description** The Mermaid Reef Marine Park is about 280 km north-west of Broome, adjacent to the Argo-Rowley Terrace Marine Park and about 13 km from the WA Rowley Shoals Marine Park. This marine park covers an area of 540 km² and water depths from less than 15 m to 500 m. 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 provide an upstream source for recruitment to reefs further south. The marine park was originally proclaimed under the *National Parks and Wildlife Conservation Act* on 10 April 1991 as the Mermaid Reef Marine National Nature Reserve and proclaimed under the EPBC Act on 14 December 2013 and renamed Mermaid Reef Marine Park on 9 October 2017.
		Natural values This marine park includes examples of ecosystems representative of the Northwest Transition – an area of shelf break, continental slope, and most 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. A KEF 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. BIAs within this marine park include breeding habitat for seabirds and a migratory pathway for the pygmy blue whale.
		Cultural values 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).
		Heritage values No International or National Heritage listings apply to this marine park. Mermaid Reef-Rowley Shoals was established on the Commonwealth Heritage List in 2004, meeting Commonwealth Heritage listing criteria A, B, C and D. This marine park contains one known shipwreck listed under the *Historic Shipwrecks Act*: Lively (wrecked in 1810).
		Social and economic values Tourism, recreation and scientific research are important activities in this marine park.

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North-west Marine Park Network	IUCN zones	Description and values
Montebello Marine Park	Multiple Use (VI)	**Description** The Montebello Marine Park is offshore of Barrow Island and 80 km west of Dampier, extending from the WA State waters boundary, and is adjacent to the WA Barrow Island and Montebello Islands marine parks. This marine park covers an area of 3,413 km² and water depths from less than 15 m to 150 m. The marine park was proclaimed under the EPBC Act on 14 December 2013 and renamed Montebello Marine Park on 9 October 2017.
		Natural values 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 KEF of this marine park is the ancient coastline at 125 m depth contour. This marine park supports a range of species listed under the EPBC Act. BIAs within this marine park include breeding habitat for seabirds, internesting, foraging, mating and nesting habitat for marine turtles, a migratory pathway for humpback whales, and foraging habitat for whale sharks. The marine park contains important breeding grounds for four turtle species: flatback, green, hawksbill and loggerhead turtles.
		Cultural values The Yamatji Marlpa 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).
		Heritage values No International, Commonwealth or National listings apply to this marine park, but this marine park is adjacent to the WA 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*: Trial (wrecked in 1622), the earliest known shipwreck in Australian waters, and Tanami (unknown date).
		Social and economic values Tourism, commercial fishing, mining and recreation are important activities in this marine park.

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North-west Marine Park Network	IUCN zones	Description and values
Ningaloo Marine Park	National Park (II) Recreational Use (IV)	**Description** The Ningaloo Marine Park stretches about 300 km along the west coast of the Cape Range Peninsula, and is adjacent to the WA Ningaloo Marine Park and Gascoyne Marine Park. This marine park covers an area of 2,435 km² 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 WA 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. The marine park was originally proclaimed under the *National Parks and Wildlife Conservation Act* on 20 May 1987 as the Ningaloo Marine Park (Commonwealth waters) and proclaimed under the EPBC Act on 14 December 2013 and renamed Ningaloo Marine Park on 9 October 2017.
		Natural values This marine park includes examples of ecosystems representative of: • Central Western Shelf Transition – continental shelf of water depths up to 100 m, and a significant transition zone between tropical and temperate species • 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 • Northwest Province – an area of continental slope comprising diverse and endemic fish communities • 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. KEFs are: • canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula • Commonwealth waters adjacent to Ningaloo Reef • continental slope demersal fish communities. Ecosystems represented in this marine park are influenced by interaction of the Leeuwin Current, Leeuwin Undercurrent and the Ningaloo Current. This marine park supports a range of species listed under the EPBC Act. BIAs within this marine park include breeding and 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 dugongs, and foraging habitat for whale sharks.

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North-west Marine Park Network	IUCN zones	Description and values
		Cultural values 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.
		Heritage values *World Heritage* 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. *National Heritage* The Ningaloo Coast overlaps this marine park, meeting the national heritage listing criteria A, B, C, D, and F. *Commonwealth Heritage* The Ningaloo Marine Area (Commonwealth waters) meets Commonwealth Heritage listing criteria A, B and C. The Ningaloo Marine Area overlaps this marine park. *Historic shipwrecks* This marine park contains more than 15 known shipwrecks listed under the *Historic Shipwrecks Act*.
		Social and economic values Tourism and recreation, including fishing, are important activities in this marine park.
Roebuck Marine Park	Multiple Use (VI)	**Description** The Roebuck Marine Park is about 12 km offshore of Broome and is adjacent to the WA Yawuru Nagulagun/Roebuck Bay Marine Park. This marine park covers an area of 304 km² and a water depth range of less than 15 m to 70 m. 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 WA Yawuru Nagulagun/Roebuck Bay Marine Park, providing connectivity between offshore and inshore coastal waters of Roebuck Bay. The marine park was proclaimed under the EPBC Act on 14 December 2013 and renamed Roebuck Marine Park on 9 October 2017.

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North-west Marine Park Network	IUCN zones	Description and values
		Natural values 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. BIAs within this marine park include breeding and resting habitat for seabirds, foraging and internesting habitat for marine turtles, a migratory pathway for humpback whales, and foraging habitat for dugongs.
		Cultural values 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. 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 snake-like metaphysical beings inhabit the sea. 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 socioeconomic 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.
		Heritage values No international, Commonwealth or national listings apply to the marine park, but it is adjacent to the West Kimberley National Heritage place.
		Social and economic values Tourism, commercial fishing, pearling and recreation, including fishing, are important activities that occur in the marine park.

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North-west Marine Park Network	IUCN zones	Description and values
Shark Bay Marine Park	Multiple Use (VI)	**Description** The Shark Bay Marine Park is about 60 km offshore of Carnarvon, adjacent to the Shark Bay World Heritage property and National Heritage place. This marine park covers an area of 7,443 km², extending from the WA State water boundary, and a water depth range between 15 m and 220 m. The marine park was proclaimed under the EPBC Act on 14 December 2013 and renamed Shark Bay Marine Park on 9 October 2017.
		Natural values This marine park includes examples of ecosystems representative of: • Central Western Shelf – a predominantly flat, sandy and low-nutrient area, in water depths 50 to 100 m; the bioregion is a transitional zone between tropical and temperate species • 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. Ecosystems represented in this marine park are influenced by the Leeuwin, Ningaloo and Capes currents. This marine park supports a range of species listed under the EPBC Act. BIAs 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.
		Cultural values 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. The Yamatji Marlpa Aboriginal Corporation is the Native Title Representative Body for the Yamatji region.
		Heritage values no international, commonwealth or national heritage listings apply to this marine park, but this marine park is adjacent to the Shark Bay World Heritage property and Shark Bay National Heritage place. The marine park contains about 20 known shipwrecks listed under the *Historic Shipwrecks Act*.
		Social and economic values Tourism, commercial fishing, mining and recreation, including fishing, are important activities in the marine park.

Source: DNP, 2018a

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12.5.2 Commonwealth Marine Parks within Indian Ocean territory

Table 12-2 describes the values of the Indian Ocean territory AMPs according to the Christmas Island Marine Park Management Plan (DNP 2025a) and the Cocos (Keeling) Islands Marine Park Management Plan (DNP 2025b).

Table 12-2: Summary of Australian Marine Parks within Indian Ocean territories

Indian Ocean territory marine park	IUCN zones	Values
Christmas Island Marine Park (DNP 2025a)	National Park (II) Habitat Protection (IV)	**Description** Christmas Island Marine Park covers an area of 277,016 km² and extends from the island's shoreline to the limit of Australia's Exclusive Economic Zone, about 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.
		Natural values 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; 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. BIAs 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. Christmas Island includes rainforests, surrounding clear azure waters, and marine and terrestrial habitats and species of international conservation significance.
		Cultural values 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. History of the land has been passed down through generations through historical and cultural stories.
		Heritage values Not listed.
		Social and economic values This marine park is valued for fishing (commercial, recreational and subsistence), diving, snorkelling and tourism. There is potential for scientific study and educational activities.

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Indian Ocean territory marine park	IUCN zones	Values
Cocos (Keeling) Islands Marine Park (DNP 2025b)	National Park (II) Habitat Protection (IV)	**Description** Cocos (Keeling) Islands are located around 2,750 km north-west of Perth. The Cocos (Keeling) Islands Marine Park covers a 467,054 km² area, extending from most of the islands' shoreline to the limit of the Australian EEZ, about 100 nm from shore. The Cocos (Keeling) Islands are a group of 27 tropical low-lying coral islands. The Cocos (Keeling) Islands Marine Park was established on the 20 March 2022 by the Australian Government under the EPBC Act and managed by the Commonwealth DNP.
		Natural values 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) and 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. 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), and species such as dolphins, deep-sea fish and sharks that are or may be threatened elsewhere in the region.
		Cultural values 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, which is evident through traditional fishing practices, and environmental knowledge of the marine environment, which has been sustained over generations. The lagoon and ocean are an important part of life for all community members living on the remote atoll.
		Heritage values Not listed.
		Social and economic values This marine park is valued for recreational and subsistence activities (fishing, boating, diving, snorkelling, kite surfing, and kayaking), tourism, scientific research and educational activities.

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12.6 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). However, the monsoon vine thickets on the coastal sand dunes of Dampier Peninsula TEC occurs on the coastal dunes of Dampier Peninsula in the NWMR. The subtropical and temperate coastal saltmarsh (which is a TEC) occurs within the marine water of the SWMR. No TECs occur in the NMR. Table 12-3 describes TECs in the NWMR.

Table 12-3: Summary of threatened ecological communities within the NWMR

TEC	Description	Conservation values
Monsoon vine thickets on the coastal sand dunes of Dampier Peninsula	The ecological community represents certain occurrences of monsoon vine thickets in the southwest Kimberley region of WA, predominantly restricted to the coastlines of the Dampier Peninsula from Broome in the south to One Arm Point in the north and on the north-eastern coast of the Peninsula from One Arm Point to Goodenough Bay (DSEWPaC 2013d). The TEC occurs as discontinuous patches of dense vegetation and contains about 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).	The ecological community is listed as endangered (DSEWPaC 2013d). The extent of the ecological community corresponds to Country (the traditional lands) of the Bardi Jawi, Djabera Djabera, Goolarabaloo, Jabirr Jabirr, Nyul Nyul and Yawuru Indigenous people. The ecological community is of cultural significance (DSEWPaC 2013d). 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).

12.7 Australian Whale Sanctuary

The Australian Whale Sanctuary (DCCEEW 2023g) 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 3 nm State/Territory waters limit out to the boundary of the EEZ (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. It is the responsibility of the state and territory governments to protect whales and dolphins within State and Territory waters (3 nm from the coastline).

12.8 State marine parks and reserves

State marine parks and reserves, proclaimed under the *Conservation and Land Management Act 1984* (WA), are in State waters and vested in the WA Conservation and Parks Commission. Marine-interfacing state marine parks and reserves of WA have been considered, with 12 occurring in the NWMR (Table 12-4), six in the NMR and 14 in the SWMR.

The Exmouth Gulf Taskforce delivered its final report, including advice and recommendations to the Minister for the Environment in 2025, to inform the Exmouth Gulf Marine Park and outline its values and recommended management approach (Government of Western Australia 2025).

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12.9 Summary of protected areas within the NWMR

Table 12-4 describes the protected areas classed as natural within the NWMR. Protected places classed as Indigenous and historic within the NWMR are described in Table 13-2.

Table 12-4: Protected areas within the NWMR

Protected area	Woodside activity area			IUCN protected area category* or relevant park zone	Description and values
	Browse	*NWS/ Scarborough*	*North West Cape*		
World Heritage properties					
Shark Bay World Heritage property	-	-	✓	Natural	**Description** 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).
					Conservation values Universal values of the Shark Bay World Heritage property include large and diverse seagrass beds, stromatolites and populations of dugongs and threatened species. Inscribed under natural criteria vii, viii, ix and x (UNESCO 1991).
The Ningaloo Coast World Heritage property	-	-	✓	Natural	**Description** The Ningaloo Coast World Heritage property is about 710,000 ha and lies within the Ningaloo AMP and was included on the World Heritage List in 2011 (UNESCO 2011).
					Conservation values Universal values of the Ningaloo Coast World Heritage property include high marine species diversity and abundance; particularly, Ningaloo Reef supports both tropical and temperate marine reptiles and mammals inscribed under natural criteria vii and x (UNESCO 2011).
Murujuga Cultural Landscape	-	✓	-	Indigenous	See Section 12.2.1 for the description and values of this World Heritage property.
National Heritage places					
Shark Bay	-	-	✓	Natural	**Description** 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/ Scarborough*	*North West Cape*		
					Conservation values This National Heritage place has multiple 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 provides a refuge for 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	-	-	✓	Natural	**Description** 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).
					Natural values The Ningaloo Coast contains one of the best developed nearshore reefs in the world, being home to rugged limestone peninsulas, spectacular coral and sponge gardens, and the whale shark. The Ningaloo Coast meets National Heritage listing criteria a, b, c, d and f (Commonwealth of Australia 2010).
The West Kimberley	✓	✓	-	Natural	**Description** The West Kimberley National Heritage place covers an area of around 192,000 km² in the north-west of Australia from Broome to Wyndham, and was established on the National Heritage List in 2011 (Commonwealth of Australia 2011a).
					Conservation values 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. This National Heritage place also contains a remarkable history of Indigenous occupation, with many places of Indigenous sacred value. The West Kimberley meets the National Heritage listing criteria a, b, c, d, e, f, g, h and i (Commonwealth of Australia 2011a).

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Protected area	Woodside activity area			IUCN protected area category* or relevant park zone	Description and values
	Browse	*NWS/ Scarborough*	*North West Cape*		
Dampier Archipelago	-	✓	-	Historic	**Description** The Dampier Archipelago National Heritage place, about 1550 km north of Perth in WA, covers around 400 km² of islands, reefs and the Burrup Peninsula, and was added to the National Heritage List on 3 July 2007 for its extensive and significant Indigenous rock art and natural values (Commonwealth of Australia 2007). **Conservation values** The Dampier Archipelago National Heritage place is recognised for its outstanding cultural heritage values, particularly its extensive and diverse rock engravings that record Aboriginal responses to environmental change over thousands of years. The area is notable for the rarity and density of its engravings and stone features, its high potential to yield information about Australia's cultural history, and its representation of major Pilbara rock art styles. It also demonstrates a high degree of creative and technical achievement through detailed and complex depictions of human activity and fauna. The Dampier Archipelago meets National Heritage criteria a, b, c, d and f (Commonwealth of Australia 2007).
Dirk Hartog Landing Site/Cape Inscription	-	-	✓	Indigenous	**Description** Cape Inscription, located on Dirk Hartog Island in WA, was inscribed on the National Heritage List in 2006 and marks the site of the earliest recorded European landings on Australia's west coast in 1616, with subsequent visits over 250 years contributing to the mapping of the continent and its inclusion on world maps (Commonwealth of Australia 2006b). **Conservation values** The Cape Inscription/Dirk Hartog Landing National Heritage place is recognised for its outstanding cultural heritage values as the site of the earliest recorded European landing on Australia's west coast and for its strong associations with a sequence of prominent explorers and surveyors over a 250-year period. The area is notable for the rarity of its surviving physical evidence of early exploration, including inscription sites and landing locations, and its role in the development of European scientific knowledge, particularly early botanical collection and classification. It also demonstrates the processes of exploration, survey and mapping that led to the first accurate delineation of the Australian coastline and major changes in world cartography. The Cape Inscription/Dirk Hartog Landing meets National Heritage criteria a, b, d and h (Commonwealth of Australia 2006b).

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Protected area	Woodside activity area			IUCN protected area category* or relevant park zone	Description and values
	Browse	*NWS/ Scarborough*	*North West Cape*		
HMAS Sydney II and HSK Kormoran Shipwreck Sites	-	-	✓	Historic	**Description** The HMAS Sydney II and HSK Kormoran shipwrecks are about 290 km west-south-west of Carnarvon, WA, in waters around 2,500 m deep, and were added to the National Heritage List in 2011 after their significance as the site of a major World War II naval battle on 19 November 1941.
					Conservation values The HMAS Sydney II and HSK Kormoran Shipwreck Sites are recognised for their outstanding cultural heritage values as the remains of a defining naval engagement in Australia's World War II history and for their enduring significance as places of loss and commemoration. The sites are notable for the rarity and integrity of their surviving underwater fabric, which provides important archaeological evidence of the 1941 battle and has contributed to resolving longstanding historical uncertainties. They also demonstrate aspects of wartime technological innovation and Australia's evolving wartime experience, alongside strong social value as the final resting places of those who perished. The HMAS Sydney II and HSK Kormoran Shipwreck Sites meet Commonwealth Heritage criteria a, c, f, g and h (Commonwealth of Australia 2011b).
Commonwealth Heritage places					
Ashmore Reef National Nature Reserve	✓	-	-	Natural	**Description** The Ashmore Reef Commonwealth Heritage place is 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).
					Conservation values Ashmore Reef has major significance as a staging point for wading birds migrating between Australia and the northern hemisphere and supports high concentrations of breeding seabirds, many of which are nomadic and typically breed on small, isolated islands. Ashmore Reef is an important scientific reference area for migratory seabirds, sea snakes and marine invertebrates. The Ashmore Reef Commonwealth Heritage place is significant for its history of human occupation and use. The island is believed to have been visited by Indonesian fishers 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).

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Protected area	Woodside activity area			IUCN protected area category* or relevant park zone	Description and values
	Browse	*NWS/ Scarborough*	*North West Cape*		
Learmonth Air Weapons Range Facility	-	-	✓	Natural	**Description** Located along the Ningaloo coastline, the Learmonth Air Weapons Range 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). **Conservation values** 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. The Learmonth Air Weapons Range Facility meets the Commonwealth Heritage listing criteria a, b and c (DCCEEW n.d.-b).
Mermaid Reef–Rowley Shoals	-	✓	-	Natural	**Description** The Mermaid Reef–Rowley Shoals Commonwealth Heritage place is within the boundary of the Mermaid Reef Marine National Nature Reserve. The site was listed as a Commonwealth Heritage place in 2004 (DCCEEW n.d.-a). **Conservation values** 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 that are at or near the limits of their geographic ranges, including fishes known previously only from Indonesian waters. Rowley Shoals is important for benchmark studies as one of the few places off the north-west coast of WA that have been the site of major biological collection trips by the Western Australian Museum (DCCEEW n.d.-a).
Ningaloo Marine Area – Commonwealth Waters	-	-	✓	Natural	**Description** The Ningaloo Marine Area Commonwealth Heritage place is 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).

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Protected area	Woodside activity area			IUCN protected area category* or relevant park zone	Description and values
	Browse	*NWS/ Scarborough*	*North West Cape*		
					Conservation values The Ningaloo Marine Area Commonwealth Heritage place provides a migratory pathway for humpback whales and foraging habitat for whale shark. The place is an important breeding area for billfish and manta ray. The Ningaloo Marine Area provides opportunities for scientific research relating to aspects of the area's unique features, including tourism, marine ecology (whales, turtles, whale shark, fish) and oceanography (DCCEEW n.d.-f).
Scott Reef and Surrounds – Commonwealth Area	✓	-	-	Natural	**Description** Scott Reef and Surrounds Commonwealth Heritage place is within the WA coastal waters surrounding North and South Scott Reef. The site was listed as a Commonwealth Heritage place in 2004 (DCCEEW n.d.-e).
					Conservation values 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 that are at or near the limits of their geographic ranges, including fish known previously only from Indonesian waters. Scott Reef is recognised as important for scientific research and benchmark studies due to its age, the extensive documentation of its geophysical and physical environmental characteristics, and its use as a site of major biological collection trips and surveys by the Western Australian Museum and AIMS (DCCEEW n.d.-e).
Yampi Defence Area	✓	-	-	Natural	**Description** 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 unusual (DCCEEW n.d.-c).
					Conservation values 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 pindin scrub of the drier areas in the south-west Kimberley. The Yampi Peninsula contains one of the richest amphibian records in the Kimberley. The Yampi Defence Area meets Commonwealth Heritage Listing criteria a, b and c (DCCEEW n.d.-c).

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Protected area	Woodside activity area			IUCN protected area category* or relevant park zone	Description and values
	Browse	*NWS/ Scarborough*	*North West Cape*		
HMAS Sydney II and HSK Kormoran Shipwreck Sites	-	-	✓	Historic	Refer to National Heritage properties for a description and the conservation values of the HMAS Sydney II and HSK Kormoran Shipwreck Sites.
Wetlands of international importance (Ramsar)					
Ashmore Reef National Nature Reserve	✓	-	-	Ramsar	**Description** The Ashmore Reef Ramsar site is 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). **Conservation values** The Ashmore Reef Ramsar site supports internationally significant populations of seabirds and shorebirds, is important for turtles (green, hawksbill and loggerhead) and dugongs, and has the highest diversity of hermatypic (reef-building) corals on the WA coast. It is known for its abundance and diversity of sea snakes. However, populations of sea snakes at Ashmore Reef since 1998 have been in decline (Commonwealth of Australia 2002b). **Cultural values** 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).
Eighty Mile Beach	-	✓	-	Ramsar	**Description** The Eighty Mile Beach Ramsar site covers an area of 1,250 km², located along a long section of the WA coastline adjacent to the Eighty Mile Beach AMP (refer below) (CALM 2003a). **Conservation values** The Eighty Mile Beach Ramsar site includes saltmarsh and a raised peat bog more than 7,000 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 landfall for waders migrating south for the austral summer (CALM 2003a).

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Protected area	Woodside activity area			IUCN protected area category* or relevant park zone	Description and values
	Browse	***NWS/ Scarborough***	***North West Cape***		
Ord River Floodplain	✓	-	-	Ramsar	**Description** 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 or breeding ground for migratory birds, waterbirds, fish, crabs, prawns and crocodiles. The site supports vulnerable species under the EPBC Act, including freshwater sawfish (*Pristis microdon*), green sawfish (*Pristis zijsron*) and the Australian painted snipe (*Rostratula australis*). The site is also one of the only two known habitats in WA of the nationally endangered northern river shark (*Glyphis garricki*) (DCCEEW 2019a).
					Conservation values The site represents the best example of wetlands associated with the floodplain and estuary of a tropical river system in the Tanami–Timor Sea Coast bioregion in the Kimberley. In addition, the False Mouths of the Ord are the most extensive mudflat and tidal waterway complex in WA (DCCEEW 2019a).
Roebuck Bay	-	✓	-	Ramsar	**Description** The Roebuck Bay Ramsar site covers an area of 550 km², south of Broome and adjacent to the Roebuck AMP (refer below) (CALM 2003b).
					Conservation values 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 (*Orcaella heinsohni*) – a species with a limited distribution, vulnerable conservation status and high cultural value (CALM 2003a; D'Cruz *et al*. 2022).
State marine parks and reserves					
Bardi Jawi Gaarra Marine Park	✓	-	-	Sanctuary, Recreation, Special Purpose Zones (biocultural	**Description** The Bardi Jawi Gaara Marine Park is in the West Kimberley region surrounding the northern part of the Dampier Peninsula and the western islands of the Buccaneer Archipelago, covering areas of about 2,040 km².

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Protected area	Woodside activity area			IUCN protected area category* or relevant park zone	Description and values
	Browse	*NWS/ Scarborough*	*North West Cape*		
				conservation and cultural protection), and General use	**Conservation values** The Bardi Jawi Gaara 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).
					Social and Economic Values 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 or recreational activities and water sports (DBCA 2022a).
					Cultural values 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).
Barrow Island Marine Park and Barrow Island Marine Management Area, and Montebello Islands Marine Park (jointly managed)	-	✓	-	Sanctuary, Recreation, General Use and Special Purpose Zones	**Description** The Barrow Island Marine Park and Barrow Island Marine Management Area and Montebello Islands Marine Park are located off the north-west coast of WA, about 1,600 km north of Perth, and cover areas of about 583 km², 42 km² and 1,147 km², respectively (DEC 2007b).
					Conservation values The Montebello/Barrow Islands marine conservation reserves have very complex seabed and island topography, resulting in a myriad of different habitats, subtidal coral reefs, macroalgal and seagrass communities, subtidal soft-bottom communities, rocky shores and intertidal reef platforms, which support a rich diversity of invertebrates and finfish. The reserves are important breeding areas for several species of marine turtles and seabirds, which use the undisturbed sandy beaches for nesting. Humpback whales migrate through the reserves and dugongs occur in the shallow warm waters (DEC 2007b).
					Social and economic values Major commercial fishing and pearling occur within the area and provide employment and economic value to surrounding communities. Nature-based tourism, water sports and recreational fishing are popular recreational activities in the area (DEC 2007b).

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Protected area	Woodside activity area			IUCN protected area category* or relevant park zone	Description and values
	Browse	*NWS/ Scarborough*	*North West Cape*		
					Cultural values 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).
Eighty Mile Beach Marine Park	-	✓	-	Sanctuary, Recreation, Special Purpose and General Use Zones	**Description** Eighty Mile Beach Marine Park covers about 2,000 km² stretching across 220 km of coastline between Port Hedland and Broome (Department of the Parks and Wildlife (DPAW) 2014a).
					Conservation values 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 that 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).
					Social and economic values Social values of the marine park include tourism, nature-based recreational activities and commercial fishing (DPAW 2014a).
					Cultural values 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).
Lalang-gaddam Marine Park	✓	-	-	Sanctuary, Recreation, General Use and Special Purpose Zones	**Description** The Lalang-gaddam Marine Park is managed under the amended joint management plan for the Lalang-gaddam/Camden Sound, Lalang-gaddam/Horizontal Falls and North Lalang-gaddam marine parks, and the indicative joint management plan for the proposed Maiyalam Marine Park (DBCA 2022b). . The Lalang-gaddam Marine Park is in the Kimberley region of WA and adjacent to Derby and the Shire of Wyndham. The Class A marine park covers about 13,085 km² (DBCA 2022b).

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Protected area	Woodside activity area			IUCN protected area category* or relevant park zone	Description and values
	Browse	*NWS/ Scarborough*	*North West Cape*		
					Conservation values 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. 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 (about 12,000). 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. This marine park has islands fringed with coral reef. It 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. About 500 pairs of crested terns also nest on the island (DBCA 2022b).
					Social and economic values This marine park has spectacular scenery that attracts tourists and generates about $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, but 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).
					Cultural values 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).

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Protected area	Woodside activity area			IUCN protected area category* or relevant park zone	Description and values
	Browse	*NWS/ Scarborough*	*North West Cape*		
Mayala Marine Park	✓	-	-	Sanctuary, Recreation, General Use and Special Purpose Zones	**Description** The Mayala Marine Park is a Class A reserve in the West Kimberley region and covers about 3,150 km² (DBCA 2022c).
					Conservation values 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. 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 2022c).
					Social and economic values 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).
					Cultural values 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 human-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).
Ningaloo Marine Park and Muiron Islands Marine Management	-	-	✓	Sanctuary, Recreation, General Use and	**Description** The Ningaloo Marine Park and Muiron Islands Marine Management Area are off the North West Cape, about 1,200 km north of Perth, and cover areas of about 2,633 km² and 286 km², respectively (CALM 2005a).

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Protected area	Woodside activity area			IUCN protected area category* or relevant park zone	Description and values
	Browse	*NWS/ Scarborough*	*North West Cape*		
Area (jointly managed)				Special Purpose Zones	**Ecological Values** 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 area features large aggregations of marine mammals, fish and whale sharks, which coincide with the Ningaloo mass coral spawning and seasonal nutrient upwelling events. The key values include karst environments, interglacial fossil reefs, rocks shores and sandy beaches. The area supports populations of threatened turtle nesting areas, seabird and shorebird roosting and breeding areas, and priority flora and vegetation that is a habitat for endemic reptiles and invertebrates (DBCA 2022d). 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).
					Social and economic values 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). The aesthetic values of the seascape are noted as a cultural value and that panoramic vistas of turquoise lagoon waters, reefs, beaches, breaking surf and the blue open ocean beyond the reef line are major attractions of the reserves.

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Protected area	Woodside activity area			IUCN protected area category* or relevant park zone	Description and values
	Browse	*NWS/ Scarborough*	*North West Cape*		
					Cultural values 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). Nyinggulu (Ningaloo) coast is highly valued by the Traditional Owners of the area, with many culturally significant values in the area, including cultural heritage sites and places of ceremonial and mythological significance. There are also culturally significant animals and plants in the areas, some of which are sacred totems that relate to Creation stories, ceremonies or are used as medicine or food. There are also significant thalu sites along the coast, which are used for ceremonies and rituals to increase the numbers of particular species. Undertaking customary activities on Country is central to maintaining the cultural heritage of the land. Such activities are an important part of Traditional Owner and wider Aboriginal culture, enabling maintenance of traditional relationships with the land and water, sharing of knowledge, engagement in traditional practices, and accessing and looking after significant places (DBCA 2022d).
North Kimberley Marine Park	✓	-	-	Sanctuary, Special Purpose and General Use Zones	**Description** The North Kimberley Marine Park covers 18,450 km², with its south-western boundary located about 270 km north-east of Derby (DPAW 2016a).
					Conservation values The marine park covers about 1,845,000 ha. The coral reefs of the North Kimberley have the greatest diversity in WA and are some of the most pristine and remarkable reefs in the world. The park surrounds more than 1,000 islands and is home to listed species such as dugongs, marine turtles and sawfishes (DPAW 2016a).
					Social and economic values The park features diverse wildlife, remarkable scenery and cultural heritage, which provide excellent opportunities for tourism experiences, recreational and nature-based activities such as fishing and hunting (DPAW 2016a).
					Cultural values The Wunambal Gaambera, 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).

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Protected area	Woodside activity area			IUCN protected area category* or relevant park zone	Description and values
	Browse	*NWS/ Scarborough*	*North West Cape*		
Pilbara Island Nature Reserve (Great Sandy Island, Rocky Island, Thevenard Island)	-	✓	-	Nature Reserve	**Description** Located between the Ningaloo Coast World Heritage area and the Dampier Archipelago, the Pilbara Islands Nature Reserve includes 174 small islands with a combined area of over 130 km² and a total coastline of over 500 km. Islands within this management area are characterised by foredunes surrounding a central depression and less than 12 m in elevation (DBCA 2020a).
					Conservation values The islands provide a refuge for threatened and migratory species, including the critically endangered eastern curlew, great knot and curlew sandpiper. The islands provide nesting beaches for green, flatback, hawksbill and loggerhead turtles. Mangrove thickets are found on some of the islands, which provide essential habitat for coastal species and shorebirds (DBCA 2020a).
					Social and economic values Visitation to the islands is low and only by private boat. Commercial accommodation is only available at Thevenard Island. Recreational fishing is undertaken around the islands. Thevenard Island previously was used as a base for an oil and gas facility but is being decommissioned (DBCA 2020a).
					Cultural values The Nganhurra Thanadri Garrbu Aboriginal Corporation and the Wirrawandi Aboriginal Corporation have native title determinations over parts of the planning area. The area holds significant cultural value to Indigenous people. Culturally significant sites, places and species are found within the area. Customary activities including hunting, ceremonies and sharing of traditional knowledge is practiced in the region. Thevenard Island contains one registered site under the *Aboriginal Heritage Act 1972*, which includes a midden scatter with three baler shell containers. Aboriginal artefacts have been found on some of the islands, including a burial site, stone and glass flakes, brunt shell and bone and baler shells. Some of the islands were possibly occupied by Indigenous people of the region (DBCA 2020a).
Rowley Shoals Marine Park	-	✓	-	Sanctuary, Recreation and General Use Zones	**Description** The Rowley Shoals comprise three reef systems: Mermaid Reef, Clerke Reef and Imperieuse Reef; all are 30 to 40 km apart. These reef systems are about 300 km west-north-west of Broome (DEC 2007a).

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Protected area	Woodside activity area			IUCN protected area category* or relevant park zone	Description and values
	Browse	*NWS/ Scarborough*	*North West Cape*		
					Conservation values 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 km² at the edge of Australia's continental shelf (DEC 2007a). Further offshore, the seafloor slopes away to the abyssal plain, some 6,000 m below. Undersea canyons slice the slope. These features are commonly associated with diverse communities of deepwater corals and sponges and create localised upwellings that aggregate pelagic species like tunas and billfish (DEC 2007a).
					Social and economic values 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).
Scott Reef	✓	-	-	Nature Reserve	The values of Scott Reef Nature Reserve are described in the Scott Reef and Surrounds – Commonwealth Area above.
Shark Bay Marine Park and Hamelin Pool Marine Nature Reserve (jointly managed)	-	-	✓	Sanctuary, Recreation, General Use and Special Purpose Zones	**Description** The Shark Bay Marine Park and Hamelin Pool Marine Nature Reserves are 400 km north of Geraldton, covering areas of about 7,487 km² and 1,270 km², respectively (CALM 1996).
					Conservation values Seagrass covers over 4,000 km² 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 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 WA. Hamelin Pool contains the most diverse and abundant examples of stromatolites found in the world. These are living representatives of stromatolites that existed some 3,500 million years ago (CALM 1996).
					Social and economic values 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).

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Protected area	Woodside activity area			IUCN protected area category* or relevant park zone	Description and values
	Browse	*NWS/ Scarborough*	*North West Cape*		
					Cultural values 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).
Yawuru Nagulagun/ Roebuck Bay Marine Park	-	✓	-	Special Purpose Zone	**Description** Yawuru Nagulagun/Roebuck Bay Marine Park is a series of intertidal flats lying on the coast to the south-east of Broome.
					Conservation values 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 dugongs and flatback turtles (DPAW 2016b).
					Social and economic values The marine park is adjacent to Broome, supports tourism activities and provides an active outdoor lifestyle for the residents of the region (DPAW 2016b).
					Cultural values 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).

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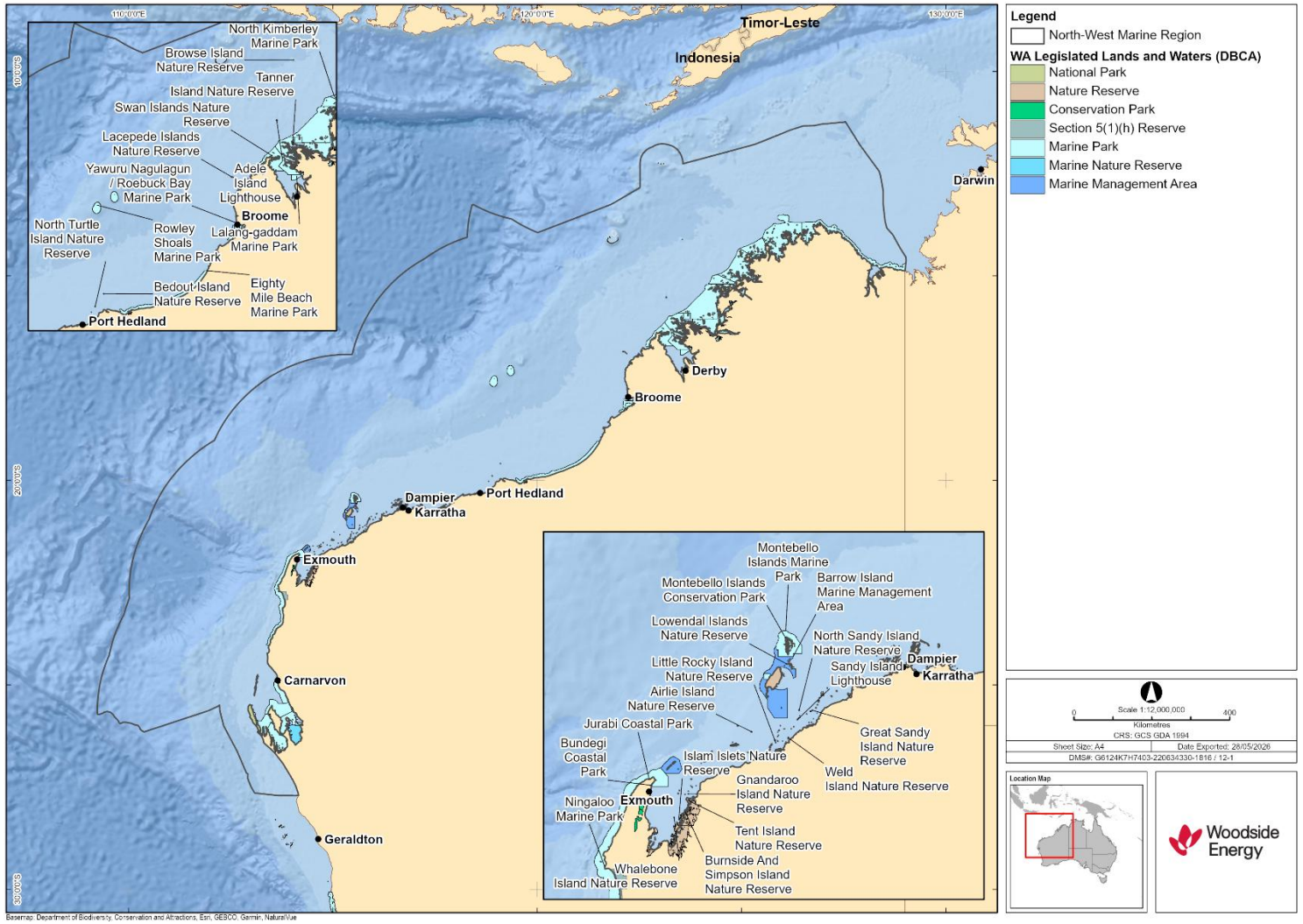


Figure 12-2: Commonwealth and State Marine Protected Areas for the NWMR

Source: Geoscience Australia (2026)

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13. SOCIOECONOMIC AND CULTURAL ENVIRONMENT

This section summarises the information relating to the socioeconomic and cultural environment of the regions offshore of WA, with a focus on the NWMR.

13.1 Cultural values and heritage

Woodside's approach to cultural values and heritage management reflects our publicly available Indigenous Communities Policy (Woodside 2025). 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 Indigenous communities. Our approach to identifying, managing and protecting cultural heritage is consistent with the United Nations Declaration on the Rights of Indigenous Peoples, engaging with Indigenous communities in ways that reflect the principles of seeking free, prior and informed consent. Where heritage is concerned, Woodside seeks to avoid impact or, if avoidance is not possible, to minimise and mitigate impact through consultation with relevant Indigenous communities. We seek to ensure Traditional Owners and Custodians are central to heritage management so 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).

13.1.1 Native title

Woodside uses established systems, such as native title, to identify Indigenous groups that have functions, interests or activities that may be affected. While acknowledging cultural features and heritage values may exist outside of the native title framework, native title claims, determinations and Indigenous Land Use Agreements (ILUAs) are defined under the *Native Title Act 1993* (Commonwealth). Woodside considers this to be the broadest extent over which Indigenous 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 that asserts it holds native title rights and interests in an area of land 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 its 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 there is an organised society that occupied the land 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 organised to create and sustain rights and duties…"

Therefore, Woodside understands native title rights and interests are held communally by an organised society, that native title claims are understood to represent the area over which Indigenous 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 (RNTBC) (section 57, *Native Title Act*) in trust or as agent for native title holders.

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ILUAs are voluntary agreements between native title parties and other people or bodies about the use and management of land 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 ABOUT the cultural features or heritage values of an area and therefore do not inform Woodside's understanding of heritage values or cultural features.

13.1.2 Coastal Indigenous groups

Indigenous 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 that 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 Indigenous groups to consult.

Woodside understands from engagement with stakeholders that extending a native title group's responsibility to areas 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 an Indigenous 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.

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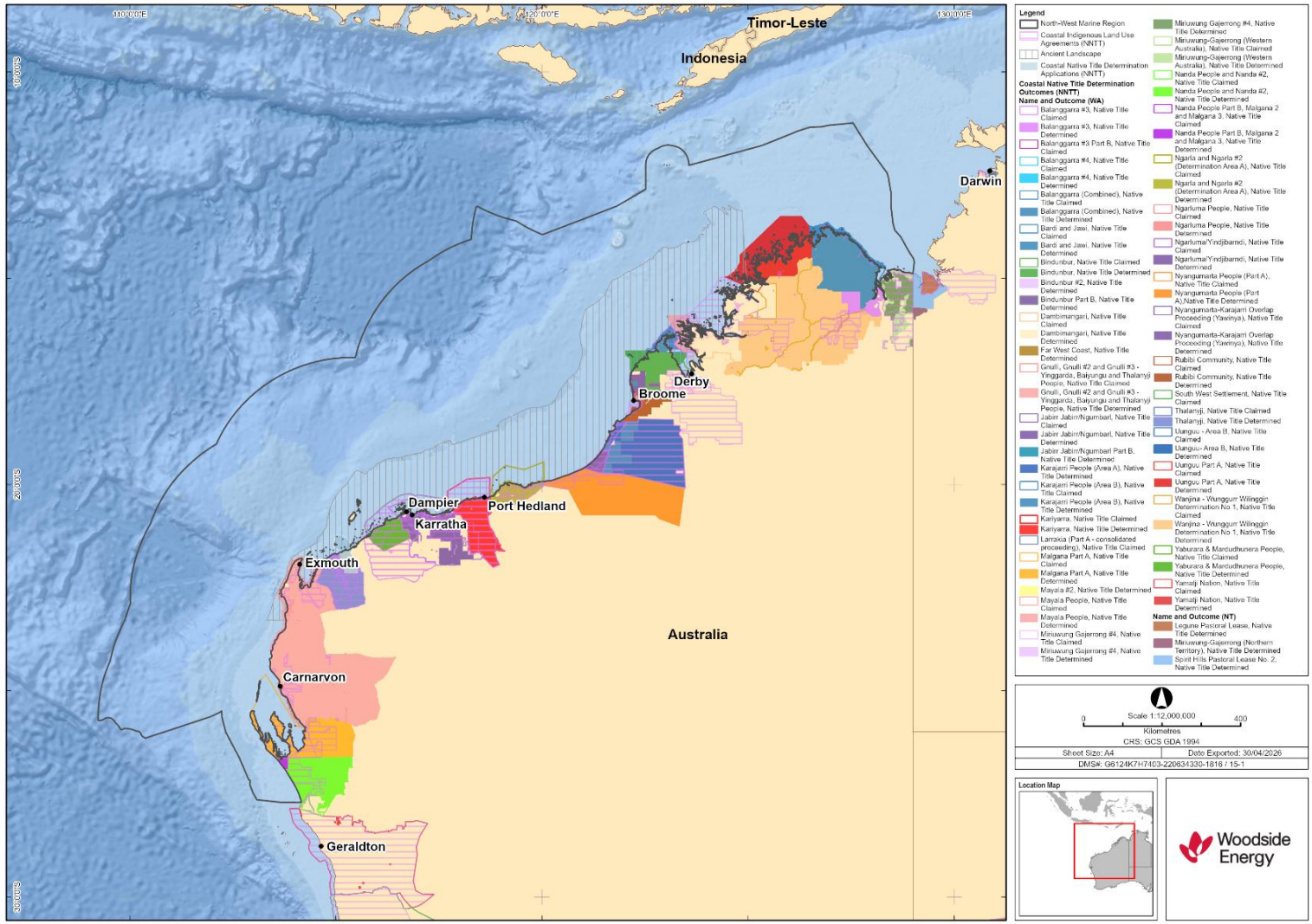


Figure 13-1: Coastal native title determination outcomes in the NWMR

Source: Department of Planning, Lands and Heritage (DPLH 2026)

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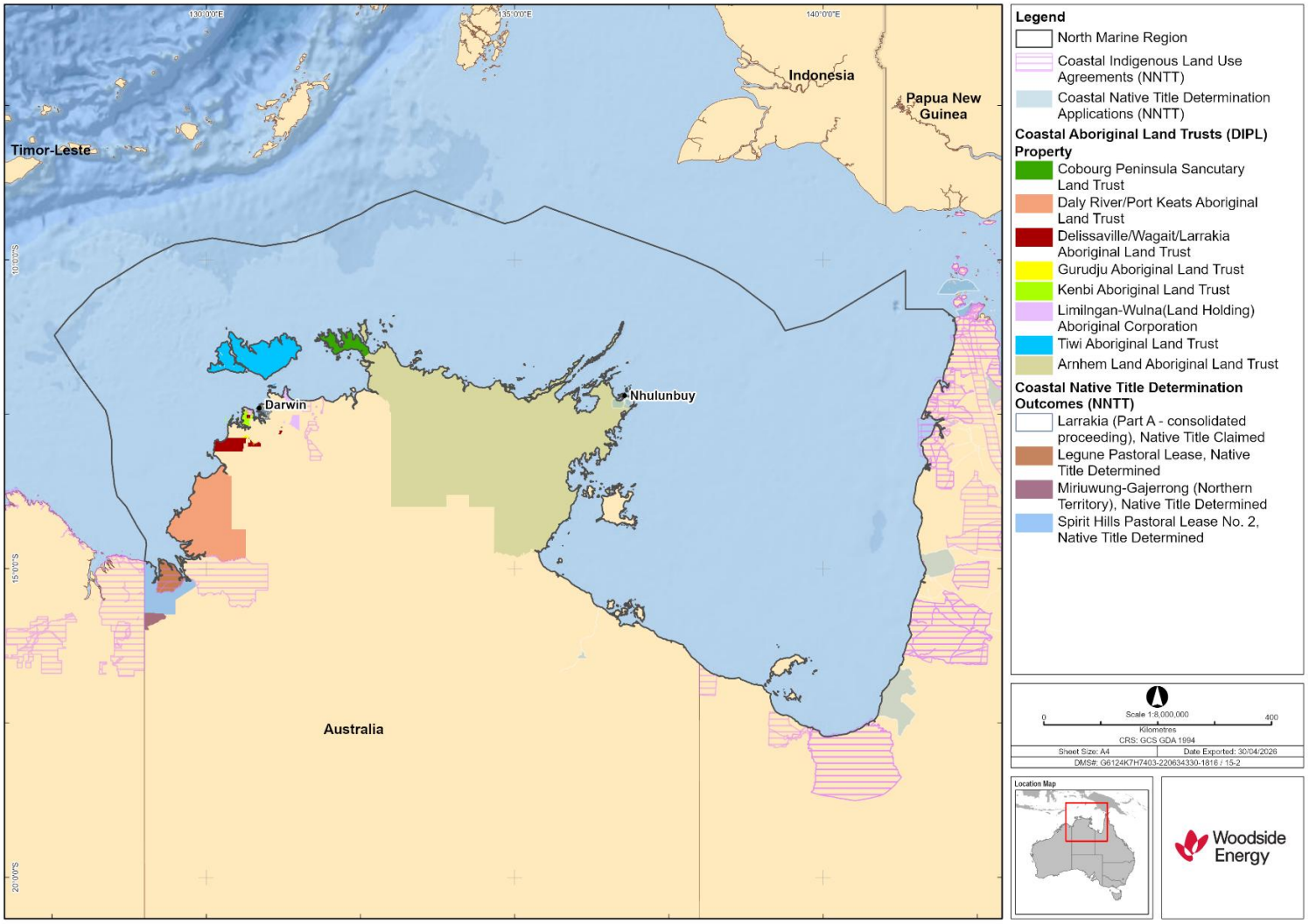


Figure 13-2: Coastal native title claims and determinations and Indigenous Land Use Agreements in the NMR

Source: DPLH (2024)

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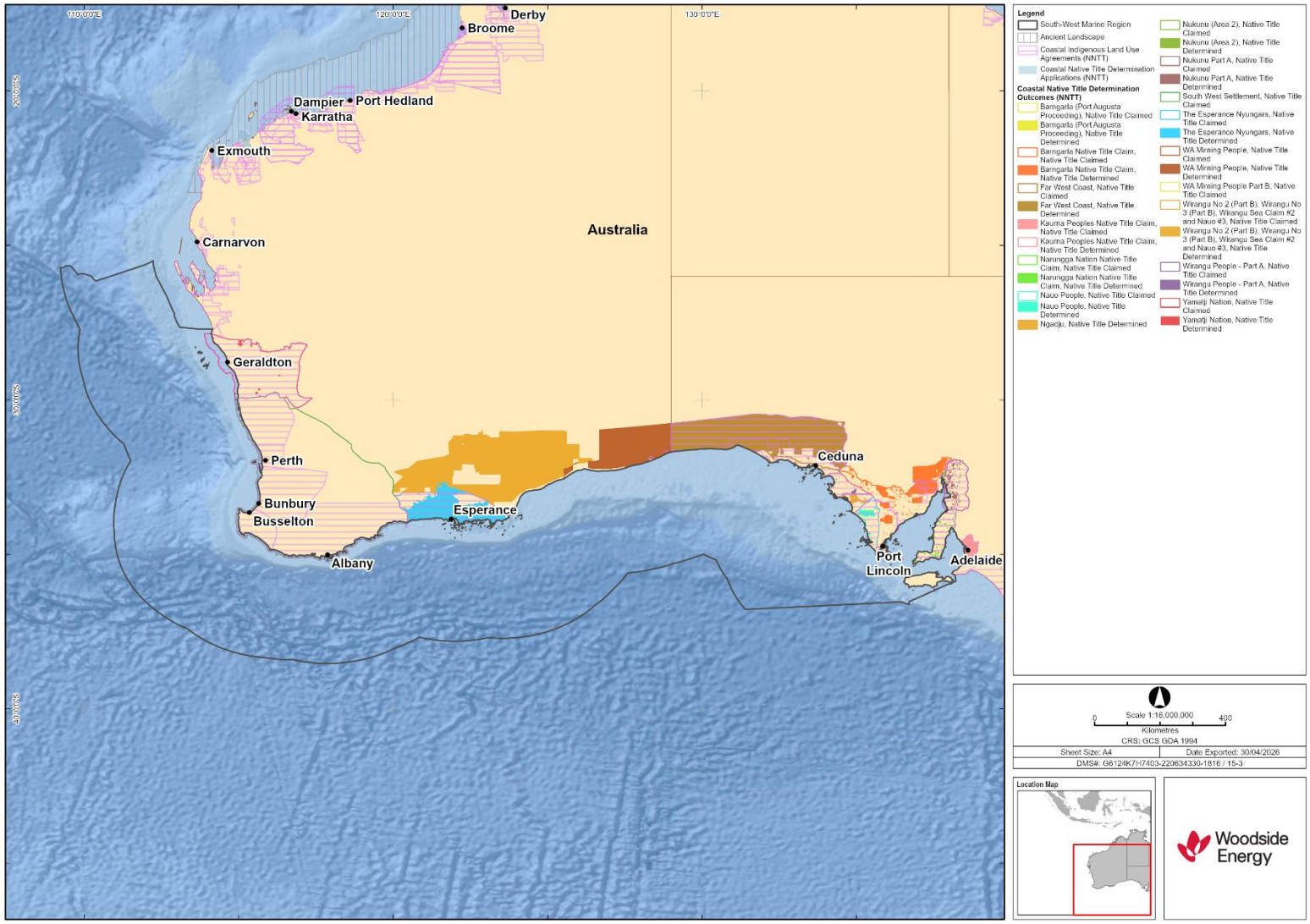


Figure 13-3: Coastal native title claims and determinations and Indigenous Land Use Agreements in the SWMR

Source: DPLH (2026)

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13.1.3 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 an Indigenous 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), and encompasses the lands, waterways and seas to which Indigenous people are connected (Australian Institute of Aboriginal and Torres Strait Islander Studies 2026).

An impact to marine ecosystems has the potential to impact cultural features where the impact is detectable within Sea Country – the seascape that 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 [Indigenous Protected Areas] deliver environmental benefits…Managing IPAs also helps Indigenous communities protect the cultural values of their Country for future generations…” (DCCEEW 2025c).

McNiven (2004) suggests that “For those mainland groups whose exploitation of the sea was limited to littoral resources, it is likely that seascapes extended no more than c. 20 to 30 km out to sea, out to the horizon and the limit of human visibility. However, in some coastal places, clouds that can be seen well over 100 km out to sea are imbued with spiritual significance. For those groups with elaborate canoe technology, seascapes extend well over the horizon.” While there is some evidence of traditional watercraft in Australia’s north-west, the recorded evidence is limited to travel across inland rivers (such as 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 5,000 km from Antarctica to the Kimberley region of WA (Double *et al.* 2010; 2012), passing Indigenous language groups along the entire west coast of Australia.

Table 13-1: Commonly identified Sea Country species and habitats

Value	Details
Marine mammals	Whales, particularly humpbacks, and dugongs are commonly identified through consultation with Indigenous people as culturally important species, with totemic importance. Common interests include maintaining their populations, biodiversity, and migration patterns.
Marine reptiles	Turtles and sea snakes are commonly identified through consultation with Indigenous people as culturally important species and a favoured resource. Indigenous 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 Indigenous people (Fijn 2021:47; Delisle *et al.* 2018).
Fish and cephalopods	Fishes, stingrays and squids are commonly identified through consultation with Indigenous people as a culturally important species, with fish generally being identified as a resource. Indigenous people may identify cultural values associated with fish species as important to maintaining both tangible (physical sites) and intangible (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 for species of squid and octopus to enhance or maintain populations. Thalu are places where these increase ceremonies are performed.
Seabirds	Seabirds, particularly shags, are commonly identified through literature as a culturally significant species (Malgana Land and Sea Management *et al.* 2021) and a resource (seabird eggs; Smyth 2007).

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Value	Details
Benthic habitats	Indigenous peoples identify benthic habitats as valuable for both their ecological and aesthetic values. Corals attract fish and seagrass provide shelter for fauna, as well as an important resource for dugongs.
Shoreline habitats	Indigenous peoples 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 notes mangroves are also valued for the flora and fauna they are associated with and support (Commonwealth of Australia 2002) and Smyth (2007) reports that Ngarda-Ngarli use mangrove seeds as a resource.

13.1.4 Marine parks

Woodside acknowledges Commonwealth and State marine park management plans have sought to recognise cultural values and responsibilities of Indigenous groups. AMPs 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”. AMPs summarise these values as natural, cultural, heritage and socioeconomic values (see Section 12.5).

13.1.5 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 (DCCEEW 2026b).

IPAs play a critical role in conserving Australia’s marine environments by enabling Aboriginal and Torres Strait Islander peoples to continue their long-standing stewardship of Sea Country. These Indigenous-led governance systems strengthen environmental management, uphold cultural responsibilities, and provide effective, place-based frameworks for caring for coastal and marine ecosystems. IPAs also support greater recognition of Indigenous rights and knowledge in marine management and offer pathways for improving co-management across Australia’s protected areas (Isaac *et al.* 2024).

As of March 2026, there are 95 dedicated IPAs spanning over 108.5 million hectares, with 6.8 million hectares of sea covered by IPAs. These account for more than 54% of the National Reserve System (DCCEEW 2026b). As of the 1 April 2026, DCCEEW will administer the IPA program.

There are 11 IPAs identified within the NWMR; ten overlap the Browse activity area and two overlap the NWS/Scarborough activity area, with the Yawuru IPA overlapping both the Browse and NWS/Scarborough activity areas, as listed in Table 13-2 and shown in Figure 13-4. IPAs in the NWMR are described in the next subsections.

Table 13-2: Indigenous Protected Areas within the NWMR

IPA	Woodside activity area		
	Browse	NWS/Scarborough	North West Cape
Balanggarra	✓	-	-
Bardi Jawi	✓	-	-
Dambimangari	✓	-	-
Karajarri	✓	-	-
Karajarri Jurarr Ngurra – Sea Country	-	✓	-
Mayala	✓	-	-
Nyangumarta Warrarn	✓	-	-
Nyul Nyul	✓	-	-
Uunguu	✓	-	-
Wilinggin	✓	-	-
Yawuru	✓	✓	-

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13.1.5.1 Balanggarra

The Balanggarra IPA was dedicated on 7 August 2013. It 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 are 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* (Country, including land, sea, rivers and islands)
- cultural sites (rock art sites, burial sites, heritage places)
- native animals
- accessible bush tucker and 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 1,000 km of river and sea frontage on their Country to manage, protect and enhance its unique biodiversity values (Balanggarra Aboriginal Corporation 2011).

13.1.5.2 Bardi Jawi

Bardi Jawi IPA is 160 km north of Broome and covers 1,269.9 km² of land and Sea Country (National Indigenous Australians Agency (NIAA), n.d.-c). 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 Country. Today people live in outstations spread along the mainland Peninsula coastline (Kimberley Land Council/Bardi Jawi Niimidiman Aboriginal Corporation 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. 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 (Kimberley Land Council/Bardi Jawi Niimidiman Aboriginal Corporation 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 the stories attached to these places are culturally important. Ecological values of the Jardagarr (coastal) Country include many species of native garrabal (birds), including eastern curlews and fork-tailed swifts (Kimberley Land Council/Bardi Jawi Niimidiman Aboriginal Corporation RNTBC 2013).

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13.1.5.3 Dambimangari

Dambimangari IPA is between Broome and Darwin, stretching east to the Prince Regent area. It covers 6,422.94 km² of landscape, including open grasslands, eucalyptus woodlands, intertidal flats and rocky reefs and shoals (NIAA, n.d.-d). 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 (dugongs).

The targets for protection are identified in the Dambimangari Healthy Country Plan 2012–2022 as:

- cultural sites
- reefs, beaches and islands
- saltwater fish
- turtles and dugongs
- whales and dolphins
- rivers, waterholes, waterfalls and wetlands (freshwater systems)
- culturally important native animals
- bush fruits and medicine plants
- right-way fire (Dambimangari Aboriginal Corporation 2012).

Jurluwarra (saltwater turtles) and warliny (dugongs) 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 (Dambimangari Aboriginal Corporation 2012).

13.1.5.4 Karajarri

Karajarri IPA was dedicated in 2014 to manage, protect and enhance Karajarri Country. The IPA covers nearly 25,000 km² 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.-a).

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" (Karajarri Traditional Lands Association (KTLA) 2014a).

The IPA includes two 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 planning and developing the IPA, 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).

13.1.5.5 Karajarri Jurarr Ngurra – Sea Country

On 3 March 2026, the Karajarri Jurarr Ngurra Sea Country IPA was declared near Bidyadanga, Kimberley, WA. The Sea Country IPA spans over 237,489 ha and sits next to the Karajarrii native title area and the already declared Karajarri IPA. It includes Eighty Mile Beach State and Commonwealth marine parks and links land and marine protected areas across the south-west Kimberley region (DCCEEW 2026b).

The Karajarri Jurarr Ngurra Sea Country IPA holds a range of cultural and ecological values, including important species, habitats, places, and unique cultural knowledge and practices. Threatened and culturally

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important species include turtles, dugongs, sawfish, dolphins and migratory shorebirds. The IPA contains important habitats that support high biodiversity that store large amounts of blue carbon, and include beaches, dunes, tidal creeks, estuaries, kunturunkarra/mangroves, mudflats, reefs, seagrass beds and rocky headlands. There are also culturally significant areas that provide food, wild oyster farming, and riji (carved pearl shell) traditions, which are recognised in the National Heritage listing of the West Kimberley (DCCEEW 2026b).

13.1.5.6 Mayala

The Mayala IPA spans most of Mayala Country, with over 375,848 ha that overlaps the Mayala Marine Park and part of the Kimberley Marine Park. The Country features extensive networks of hundreds of islands, reefs, submerged lands, sandbars, seabeds and saltwater in the Buccaneer Archipelago and King Sound of the West Kimberly region. The area contains culturally significant places for ceremony, sites for stone tools, middens, ochres and clays used for ceremonial purposes, engravings, stone arrangements and fish traps. The large tidal ranges in the region create unique marine environments that contain unique high biodiversity values. Sea Country values include large coral reefs, sea turtles, humpback whales, sharks, sailfish and whale sharks. There are large estuaries and mangrove communities that are important nursery grounds for marine life. The IPA also contains habitat and breeding grounds for migratory and threatened ocean species, including sea turtles, dugongs and sawfish (Mayala Inninalang Aboriginal Corporation RNTBC 2024).

13.1.5.7 Nyangumarta Warrarn

The Nyangumarta Warrarn IPA comprises four areas totalling about 28,675 km², 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 Indigenous 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 (Nyangumarta Warrarn Aboriginal Corporation & Yamatji Marlpa Aboriginal Corporation, 2015).

13.1.5.8 Nyul Nyul

The Nyul Nyul IPA was officially dedicated in May 2025, spanning 144,493 ha of land that is rich in cultural and ecological value. The IPA protects important freshwater springs, monsoon vine thickets, and threatened species such as the greater bilby and short-nosed sea snake. The IPA provides important cultural connection and wellbeing to the Indigenous people of the Nyul Nyul Country (Australian Public Service Commission 2025).

13.1.5.9 Uunguu

Stage one of the Uunguu IPA was declared on 23 May 2011, coinciding with the native title determination and release of the Healthy Country Plan. The IPA covers 7,598.06 km². It has been home to the Wunambal Gaambera people for many thousands of years and is part of the Wanjina Wunggurr culture. Wunambal Gaambera 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 (Wunambal Gaambera Aboriginal Corporation (WGAC) 2017). A Saltwater IPA Plan of Management was created in 2017 as a sub-plan to the Wunambal Gaambera Healthy Country Plan (WGAC 2017).[20]

Ten targets identified in the Wunambal Gaambera Healthy Country Plan are:

- Wanjina Wunggurr law – our culture
- right-way fire
- aamba (kangaroos and wallabies) and other meat foods
- wulo (rainforest)

[20] Marine areas were proposed to be added to the Uunguu IPA as an IUCN Category VI (Managed Resource) Protected Area, early in 2018.

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- yawal (waterholes)
- bush plants
- rock art
- cultural places on islands
- fish and other seafoods
- mangguru (marine turtles) and balguja (dugongs) (WGAC 2010).

The Uunguu Rangers look after land and Sea Country through pest control, visitor management, cultural heritage conservation, flora and fauna monitoring and fire management (NIAA n.d.-d).

13.1.5.10 Wilinggin

The Wilinggin IPA spans over 2.4 million hectares of remote Country in the central north Kimberley region and was declared in 2013. It includes basalt ranges and sandstone cliffs that 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.-e). Wilinggin Country is mostly landlocked, apart from two small saltwater areas: 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).

13.1.5.11 Yawuru

The Yawuru IPA was dedicated by Yawuru people in 2017, covering 2,109 km² of Yawuru coastal and inland Country (Yawuru RNTBC 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.-b).

The Yawuru IPA is managed under the Walyjalajala nagulagabu birrangun buru Plan of Management for 2017–2026 (Yaruwu RNTBC 2014). The plan includes eight targets for management:

- 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 (deep water 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

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and seagrass beds that provide habitat for dugongs (*Dugong dugon*) and EPBC Act listed threatened sea turtle species, including hawksbill turtles (*Eretmochelys imbricata*), loggerhead turtles (*Caretta caretta*), green turtles (*Chelonia mydas*) and flatback turtles (*Nataden depressus*). Roebuck Bay is a Ramsar site and has a known population of snubfin dolphins (*Orcaella heinsohni*) (Figure 8-6). Other ecological values include pearl shell beds for pearl oysters and habitat for a range of EPBC Act listed threatened species (Yaruwu RNTBC 2014).

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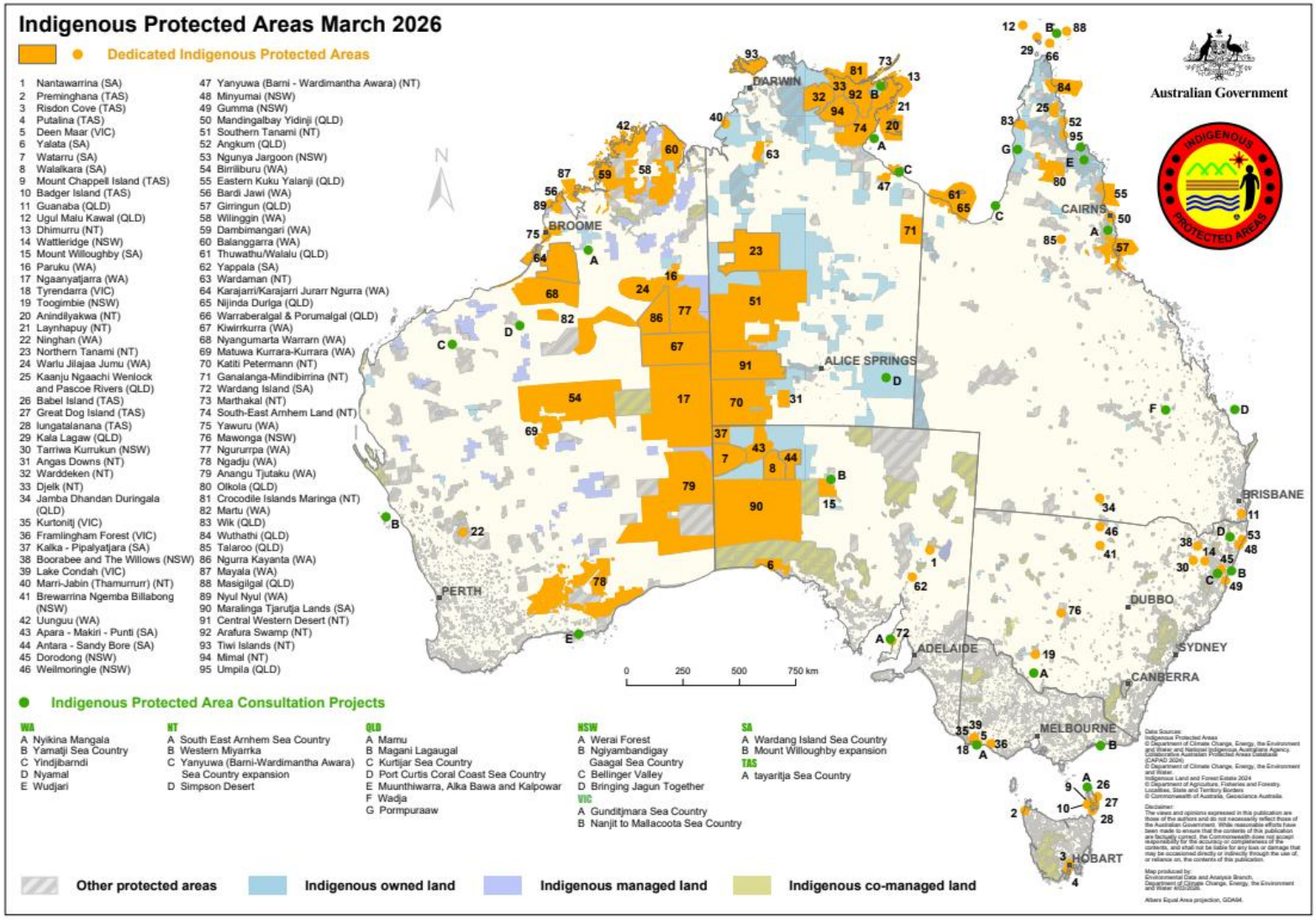


Figure 13-4: Indigenous Protected Areas in Australia

Source: DCCEEW (2026c)

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13.1.6 Indigenous cultural heritage

On 15 November 2023, the *Aboriginal Heritage Act* (WA) was restored as the legislation that manages Aboriginal heritage in WA (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 Act, 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* (Commonwealth) to protect and preserve that area.

Woodside understands communal cultural connection exists between Traditional Custodians and land and waters. It is understood from the onshore archaeological record that Indigenous 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 that have the potential to be preserved 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 that relate to preserving their fabric (as in, the tangible features) and their context (as in, their location and relationship to other archaeological and natural features). Archaeological sites may also have intangible dimensions (ICOMOS 2013), cultural values 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. They can also be new and living at the same time. An understanding of the intangible cultural heritage of different Indigenous 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 (UNESCO 2003). Table 13-3 provides context to common intangible themes that exist in Indigenous communities.

Table 13-3: Intangible heritage values associated with Sea Country

Value	Details
Songlines	Indigenous people often describe oral songlines 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. They consist of a series of invisible, interconnected routes across the landscape that mark significant sites for Indigenous people (Higgins 2021:723). Songlines demonstrate Indigenous 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 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). It is important to protect physical sites identified as comprising a component of a songline, to prevent the fragmenting or breaking apart of songlines and loss of sacred cultural knowledge. In Australia, songlines can stretch thousands of kilometres, making up a complex and organic network of stories containing cultural knowledge of Indigenous 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 mention mythical events 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 they once inhabited in their songlines (Smyth and Isherwood 2016:307). Songlines can also be used as proof of long-standing connection to land and support a legal entitlement to land rights (Higgins 2021:74). Examples where songlines contain strong references to Sea Country are more common in Pacific Islander and Torres Strait Islander communities, who often refer to seascapes and skylines in their songlines to communicate sacred knowledge that assists in safe navigation of the ocean (Neale and Kelly 2020:83-84).

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Value	Details
Creation/Dreaming sites, sacred sites and ancestral beings	The only published sources Woodside found with detailed descriptions of the location of ancestral beings or Creation/Dreaming or sacred sites place these on land, or within inland water sources such as rivers and 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 Indigenous cosmology.
Cultural obligations to care for Country	Caring for Country collectively refers to the cultural obligations of individuals and groups, as well as rituals and ceremonies required for the physical and spiritual health of the environment. In the literature Woodside reviewed, caring for Country was noted to include 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, for example, a thalu relates to marine species populations.
Knowledge of Country/customary law and transfer of knowledge	Knowledge of and familiarity with the features of Sea Country are 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 or relocation of Indigenous communities may have implications for preserving Indigenous knowledge. Further, connection to Country may be damaged where people are displaced or disrupted (such as 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).
Connection to Country	This describes the multi-faceted relationship between Indigenous people and the landscape, which is envisioned as having personhood and spirit. It is also an aspect of personal identity for many Indigenous 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).
Access to Country, including Sea Country	Access is necessary for continuing other values, including caring for Country, carrying out cultural practices and transferring 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.
Kinship systems and totemic species	Individuals may have kinship to specific species (Smyth 2008; Juluwarlu 2004) and a responsibility to care for species (Muller 2008). Kinship arises from totemic associations within Indigenous '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 marine species may have kinship/totemic relationships to Traditional Custodians, but it is understood these relationships do not prohibit people outside of that 'skin group' from hunting or eating that same species (Juluwarlu 2004).
Resource collection	Multiple marine species are identified through consultation and literature as important resources, particularly as food sources (see Section 13.1.4). In addition to their immediate value as sustenance, gathering and preparing 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.

13.1.6.1 Underwater cultural heritage

It is understood 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; University of Western Australia (UWA) 2021). Sea levels began to rise about 18,000 years ago, which flooded the coastal plain and forced further inland those who dwelled on the coast (Smyth 2007). At its lowest level during Indigenous occupation, the sea 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). Oral traditions in Australia have mapped maritime activity and changes in coastal environments back to the Holocene period, with many Indigenous stories along the northern Australia coast highlighting seafaring,

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voyages, and the coastal environments that were encountered and created in the area. These oral traditions form the intangible cultural heritage of Sea Country, which also holds knowledge of the sea level rise and change in marine environments (Farr 2025).

Archaeological material preserved on the Ancient Landscape has the potential to provide more information about the earliest periods of human occupation (Veth *et al.* 2019; UWA 2021).

Recent archaeological discoveries demonstrate the now submerged landscape was occupied and inhabited and may 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) that 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 (such as hills, particularly of igneous rock formations) that may have been focus areas for cultural activity (UWA 2021)
- karst depressions and other ‘catch points’ where artefacts may accumulate after disturbances caused by inundation (UWA 2021; Nutley 2022; Nutley 2023a)
- Madeleine Shoals, specifically identified by 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; for example, 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).

Recognising this, Woodside considers the Ancient Landscape between the mainland and the ancient coastline at 125 m depth contour KEF (Figure 13-5) as an area where potential Indigenous 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*, *Underwater Cultural Heritage Act 2018* or EPBC Act. However, these Acts only extend protection to Indigenous heritage places specified by declaration or otherwise included on a statutory list. Woodside understands there is currently no Indigenous archaeology known to exist within Commonwealth waters and no areas subject to declarations or prescriptions under these Acts.

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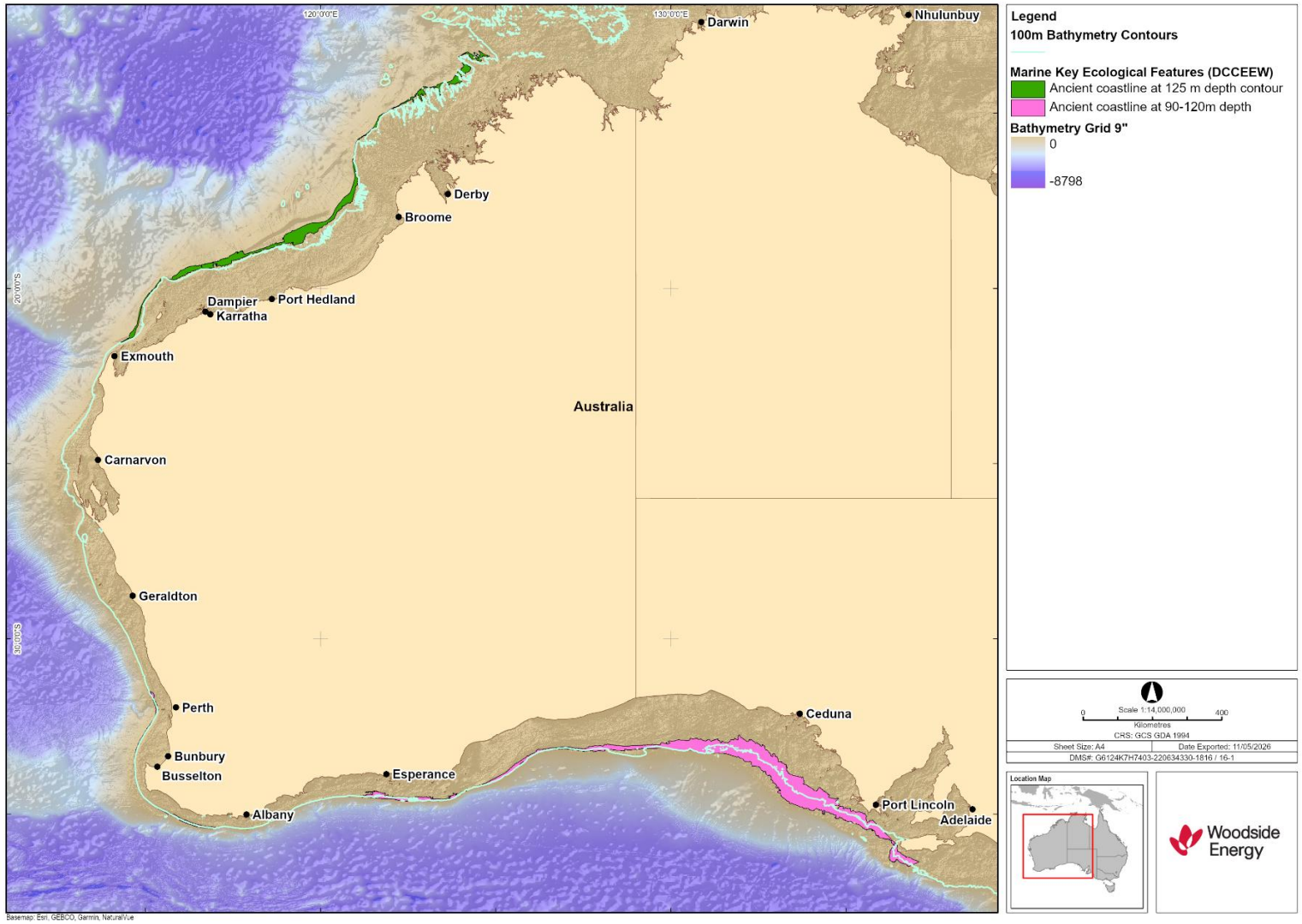


Figure 13-5: Indicative bathymetry of the ancient submerged landscape

Source: Geoscience Australia (2026); DCCEEW (2024b)

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13.1.6.2 Indigenous sites of significance

Murujuga (the Burrup Peninsula) has a very high density of significant Indigenous heritage sites and places with tangible and intangible heritage values. These places are linked to Indigenous cosmology, Dreaming stories and songs through the stories, knowledge and customs that are still held by Traditional Custodians.

The MCL is a UNESCO World Heritage inscribed property. The Dampier Archipelago (including the Burrup Peninsula) was included on the National Heritage List in 2007 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. The values of MCL and the Dampier Archipelago National Heritage place are described in Section 12.2.1 and Section 12.9.

DPLH maintains an Aboriginal Cultural Heritage Register of registered sites and heritage places on the Aboriginal Cultural Heritage Inquiry System. There are over 1,600 registered sites on Murujuga and the Dampier Archipelago, with around 1,100 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* (WA).

13.1.7 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 NWMR, SWMR and NMR.

13.1.8 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* (Commonwealth) 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 WA waters before the year 1900 are protected by the *Maritime Archaeology Act 1973* (WA).

There are no known National Heritage listed shipwrecks in the NWMR or NMR (Figure 13-6). The only known National Heritage listed shipwrecks are within the SWMR and include:

- the HMAS Sydney II
- the HSK Kormoran
- the Batavia.

Known historical shipwreck sites in WA waters are listed in the WA Maritime Museum Shipwreck Database (Western Australian Museum 2026). Known historical shipwreck sites in Commonwealth waters are listed in Australasian Underwater Cultural Heritage Database (DCCEEW 2026d). These databases only cover known historical sites. Figure 13-6 shows known shipwrecks for the NWMR as listed in these databases.

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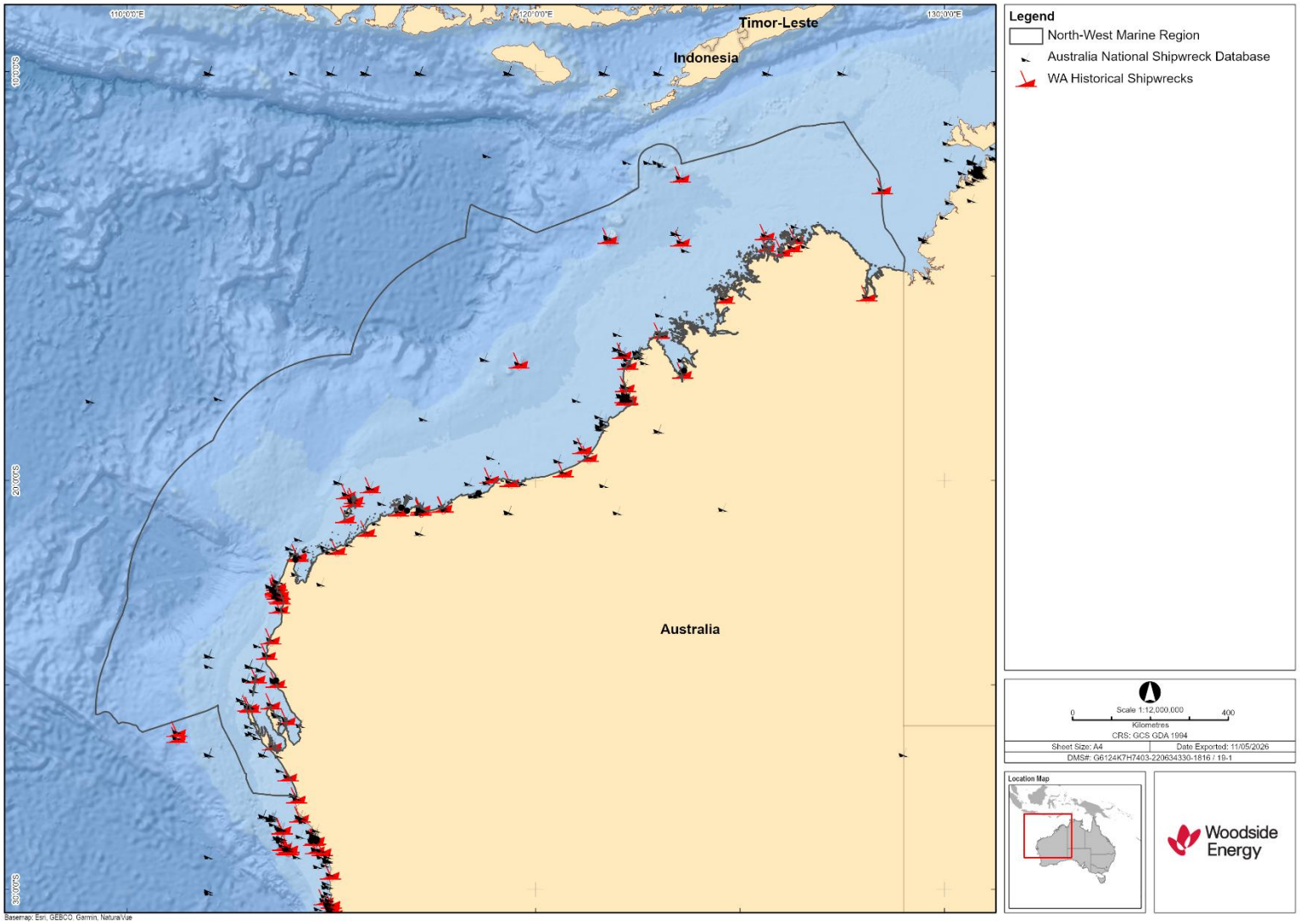


Figure 13-6: Shipwrecks in the NWMR

Source: Western Australian Museum (2026); DCCEEW (2026d)

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13.2 Socioeconomic values

Socioeconomic values include commercial and traditional fishing, tourism, recreation, shipping, oil and gas activities and defence activities.

13.2.1 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* (Commonwealth).

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 13-4 and Table 13-5, respectively. Commercial fisheries with activity in the NRMW are shown in Figure 13-7 to Figure 13-11.

Western Australia demersal fishing reforms

From January 2026, the Government of Western Australia has introduced demersal fishing reforms to manage and protect at-risk demersal fish species, to help stocks recover for future generations within the boundaries of the fishing bioregions, as defined by DPIRD (2025a). These demersal fishing reforms may affect the commercial and recreational fisheries interacting with Woodside activity areas, as described below.

North Coast bioregion

The DPIRD North Coast fishing bioregion includes the Pilbara and Kimberley regions and runs from Ashburton River south of Onslow to the border of WA and the NT (DPIRD 2026c).

Kimberley region

- Recreational and charter fishing will remain open.
- A 50% catch reduction for commercial fisheries applies from 1 January 2026 (DPIRD 2025a).

Pilbara region

- Recreational and charter fishing will remain open.
- A 50% catch reduction for commercial fisheries applies from 1 January 2026.
- Permanent closure of commercial trawl fishing for demersal scalefish applies from 1 January 2026 (DPIRD 2025a).

Gascoyne Coast bioregion

The DPIRD Gascoyne Coast fishing bioregion runs from the Zuytdorp Cliffs north of Kalbarri to the Ashburton River south of Onslow (DPIRD 2026c).

- Recreational, charter and commercial fishing will remain open (DPIRD 2025a).

West Coast bioregion

The DPIRD West Coast fishing bioregion runs from Black Point east of Augusta to the Zuytdorp Cliffs north of Kalbarri. This area includes the Houtman Abrolhos Islands (DPIRD 2026c).

- Recreational boat-based fishing for demersals did not reopen on 16 December 2025 and is scheduled to reopen in spring 2027 as an exclusively recreational fishing zone.
- Charter fishing for demersals in the metropolitan area closed from 16 December 2025, but charter fishing for demersals under the tag system will continue in the remainder of the West Coast bioregion under a reduced annual catch limit of 25 tonnes.
- Commercial fishing for demersals closed from 1 January 2026. This includes a permanent closure of gillnet fisheries and commercial line fishing south of Kalbarri, supported by a compulsory buyback of commercial fishing licences (DPIRD 2025a).

Table 13-4: Commonwealth managed fisheries

<table>
<tr><th rowspan="2">Fishery</th><th colspan="3">Woodside activity area</th><th colspan="4" rowspan="2">Description</th></tr>
<tr><th>Browse</th><th>NWS/ Scarborough</th><th>North West Cape</th></tr>
<tr><td rowspan="5">North-west Slope Trawl Fishery</td><td rowspan="5">✓</td><td rowspan="5">✓</td><td rowspan="5"></td><td>Management area</td><td colspan="3">The North-west Slope Trawl Fishery extends from 114 °E to 125 °E, from the 200 m isobath to the outer limit of the Australian Fishing Zone (AFZ) (200 nm from the coastline, which is the boundary of the Australian EEZ) (Keller et al. 2025b; Smith et al. 2025).</td></tr>
<tr><td colspan="2">Species targeted</td><td>Fishing methods</td><td>Fishing depth</td></tr>
<tr><td colspan="2">Australian scampi (Metanephrops australiensis) and smaller quantities of velvet and Boschma’s scampi (M. velutinus and M. boschmai). A quantity of prawns is harvested each season, and squids are becoming an increasingly significant component of the catch.
Mixed snappers (Lutjanidae) and redspot emperor (Lethrinus lentjan) have historically been an important component of the catch (Blake et al. 2021).</td><td>Fishing for scampi occurs over soft, muddy sediments or sandy habitats, using demersal trawl gear on the continental slope (Patterson et al. 2017).</td><td>Typically depths of 350 to 600 m (Patterson et al. 2017).</td></tr>
<tr><td>Fishing effort</td><td colspan="3">The North-west Slope Trawl Fishery began in 1985 and the number of active vessels peaked at 21 in the 1986–87 season, decreasing to between one and six vessels per year since 2005–06 (Keller et al. 2025b).
A total catch of 85.94 t was recorded in 2023–24, an increase from 85.34 t in 2022–23 (Keller et al. 2025b). Of the total catch, the Australian scampi made up about 65.3% in 2023–24 (56 t), up from 52% in 2022–23 (44 t). Other scampi species made up only 0.4% (369 kg) of the total catch in 2023–24, down from 10% in 2022–23 (9 t) (Keller et al. 2025b).
The stock assessment of scampi in the fishery is classified as not subject to overfishing (Keller et al. 2025b).</td></tr>
<tr><td>Active licences/ vessels</td><td colspan="3">Three vessels operated in each of the 2022–23 and 2023–24 seasons. Trawl-hours increased from 4,351 in 2022–23 to 4,555 in 2023–24 (Keller et al. 2025b).</td></tr>
</table>

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<table>
<tr><th rowspan="2">Fishery</th><th colspan="3">Woodside activity area</th><th colspan="4" rowspan="2">Description</th></tr>
<tr><th>Browse</th><th>NWS/ Scarborough</th><th>North West Cape</th></tr>
<tr><td rowspan="5">Southern Bluefin Tuna Fishery</td><td rowspan="5">✓</td><td rowspan="5">✓</td><td rowspan="5">✓</td><td>Management area</td><td colspan="3">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 areas.</td></tr>
<tr><td colspan="2">Species targeted</td><td>Fishing methods</td><td>Fishing depth</td></tr>
<tr><td colspan="2">Southern bluefin tuna (Thunnus maccoyii).</td><td>Longline, purse seine fishing, and minor line (troll and poling).</td><td>Southern bluefin tuna is a pelagic species that can be found to depths of 500 m (AFMA 2021a).</td></tr>
<tr><td>Fishing effort</td><td colspan="3">Most of the Australian fishing effort is by purse-seine vessels in the Great Australian Bight and waters off SA during summer months, and by longline off the New South Wales coastline during winter months (Patterson et al. 2025a).
The Southern Bluefin Tuna Fishery is shared among countries. Australia currently has a 35% share of the total global allowable catch. While wild capture fishing in Australia to sell directly to market can occur anywhere throughout the fishery’s 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 or 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 WA coast (Patterson et al. 2025a).
The stock is classified as not overfished (Patterson et al. 2025a).
A total of 6,325 t bluefin tuna catch was recorded for the 2023–24 fishing season, an increase from 6,034 t in the 2022–23 period (Patterson et al. 2025a). Of the total catch, 4,525 t were collected using purse seine and 1,799 t from pelagic longline.</td></tr>
<tr><td>Active licences/ vessels</td><td colspan="3">Five purse seine vessels and 27 longline vessels in the 2023–24 period, a decrease from six purse seine vessels and an increase from the 24 longline vessels in the 2022–23 period (Patterson et al. 2025a).</td></tr>
</table>

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<tr><th rowspan="2">Fishery</th><th colspan="3">Woodside activity area</th><th colspan="4" rowspan="2">Description</th></tr>
<tr><th>Browse</th><th>NWS/ Scarborough</th><th>North West Cape</th></tr>
<tr><td rowspan="5">Western Deepwater Trawl Fishery</td><td rowspan="5"></td><td rowspan="5"></td><td rowspan="5">✓</td><td>Management area</td><td colspan="3">The Western Deepwater Trawl Fishery is in deep water off WA, from the line approximating the 200 m isobath to the edge of the AFZ (Blake et al. 2021).</td></tr>
<tr><td colspan="2">Species targeted</td><td>Fishing methods</td><td>Fishing depth</td></tr>
<tr><td colspan="2">More than 50 species, historically dominated by six commercial finfish species or species groups:
• orange roughy (Hoplostethus atlanticus)
• oreos (Oreosomatidae)
• boarfish (Pentacerotidae)
• eteline snapper (Lutjanidae: Etelinae)
• apsiline snapper (Lutjanidae: Apsilinae)
• sea bream (Lethrinidae).</td><td>Demersal trawl.</td><td>Water deeper than 200 m (Blake et al. 2021).</td></tr>
<tr><td>Fishing effort</td><td colspan="3">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 deepwater bugs (Patterson et al. 2020).
Total trawl hours have been variable but relatively low since 2005–06. In 2023–24, 15 trawl-hours were recorded in the fishery, up from 2022–23 when no effort was recorded, but down from the 76 trawl-hours recorded in 2021–22 (Keller et al. 2025a).
A total of 3.39 t of catch was landed in the Western Deepwater Trawl Fishery in 2023–24, comprising various finfish species including amberjack (29%), rubyfish – mixed (Plagiogeneion spp.; 24%) and rosy snapper (13%). No catch was recorded in 2022–23 and no deepwater bugs have been landed since 2019–20 (Keller et al. 2025a).
Ruby snapper and deepwater bugs stock are considered not subject to overfishing but the biomass status of deepwater bugs is classified as uncertain (Keller et al. 2025a).</td></tr>
<tr><td>Active licences/ vessels</td><td colspan="3">Since 2004–05, one to three vessels have been active in the fishery, with one active vessel in 2023–24 (Keller et al. 2025a).</td></tr>
</table>

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<tr><th rowspan="2">Fishery</th><th colspan="3">Woodside activity area</th><th colspan="4" rowspan="2">Description</th></tr>
<tr><th>Browse</th><th>NWS/ Scarborough</th><th>North West Cape</th></tr>
<tr><td rowspan="5">Western Skipjack Tuna Fishery</td><td rowspan="5">✓</td><td rowspan="5">✓</td><td rowspan="5">✓</td><td>Management area</td><td colspan="3">The combined western and eastern skipjack tuna (Katsuwonus pelamis) 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.</td></tr>
<tr><td colspan="2">Species targeted</td><td>Fishing methods</td><td>Fishing depth</td></tr>
<tr><td colspan="2">Western skipjack tuna (Katsuwonus pelamis).</td><td>Fishers use purse seine gear (about 98% of catch) and sometimes pole and line when fishing for skipjack tuna.</td><td>Western skipjack tuna is a pelagic species that can be found to depths of 260 m (AFMA 2021b).</td></tr>
<tr><td>Fishing effort</td><td colspan="3">The Western Skipjack Tuna Fishery has not been actively fished since the 2008–09 season (Patterson and Dylewski 2024). The management arrangements for this fishery will be reviewed if active boats re-enter the fishery.</td></tr>
<tr><td>Active licences/ vessels</td><td colspan="3">No active vessels operating since 2009 (Patterson and Dylewski 2024).</td></tr>
<tr><td rowspan="5">Western Tuna and Billfish Fishery</td><td rowspan="5">✓</td><td rowspan="5">✓</td><td rowspan="5">✓</td><td>Management area</td><td colspan="3">The Western Tuna and Billfish Fishery extends to the Australian EEZ boundary in the Indian Ocean.</td></tr>
<tr><td colspan="2">Species targeted</td><td>Fishing methods</td><td>Fishing depth</td></tr>
<tr><td colspan="2">Key species caught in the fishery are bigeye tuna (Thunnus obesus), yellowfin tuna (T. albacares) and swordfish (Xiphias gladius). Striped marlin (Kajikia audax) is a minor component of the catch. Catch of albacore (T. alalunga), a non-quota species, can approach levels similar to yellowfin tuna catch in some years (Blake et al. 2022).</td><td>Fishers mainly use pelagic longline fishing gear to catch the targeted species. Minor line (including handline, troll, rod and reel) can also be used, and purse seine.</td><td>Species have a broad depth distribution, with tuna occurring at 150 to 300 m, striped marlin at 150 m and swordfish at up to 600 m (Bureau of Rural Sciences 2007).</td></tr>
<tr><td>Fishing effort</td><td colspan="3">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. 2025b).
A total of 208 t catch was landed in the 2023–24 season, remaining the same from the 2022–23 period (Patterson et al. 2025b).
Striped marlin, bigeye tuna and yellowfin tuna are classified as subject to overfishing (Patterson et al. 2025b).</td></tr>
</table>

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Fishery	Woodside activity area			Description	
	Browse	*NWS/ Scarborough*	*North West Cape*		
				Active licences/ vessels	Four pelagic longline and three minor line vessels were active during the 2023–24 season (Patterson *et al.* 2025b).

Table 13-5: State managed fisheries

Fishery	Woodside activity area			Description	Fishery		
	Browse	*NWS/ Scarborough*	*North West Cape*				
Abrolhos Islands and Mid-West Trawl Fishery			✓	***Management area***	The Abrolhos Islands and Mid-West Trawl Fishery operates around the Abrolhos Islands within the SWMR.		
				Species targeted	***Fishing methods***	***Fishing depth***	
				Saucer scallops (*Ylistrum balloti*, formerly *Amusium balloti*).	Otter trawl.	Saucer scallops occur in inshore waters around 40 m depth at the Abrolhos Islands (Wilkin *et al.* 2024).	
				Fishing effort	Previous years' catch based on State of the Fisheries annual reports provided by DPIRD: The total landings in the 2023 season was 467 t meat weight (2,333 t whole weight) (Wilkin *et al.* 2024). 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.		
				Active licences/ vessels	The number of vessels is unreported. There were ten licences in 2021 (Kangas *et al.* 2023b).		

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Fishery	Woodside activity area			Description	Fishery		
	Browse	*NWS/ Scarborough*	*North West Cape*				
Broome Prawn Managed Fishery	✓			***Management area***	The Broome Prawn Managed Fishery operates off Broome and forms part of the North Coast Prawn Fishery.		
				Species targeted		***Fishing methods***	***Fishing depth***
				Western king prawn (*Penaeus latisulcatus*), brown tiger prawns (*Penaeus esculentus*) and blue endeavour prawns (*Metapenaeus endeavouri*).		Low opening, otter prawn trawl systems.	Trawling is generally in waters between 30 and 60 m deep, but can occur down to 100 m (Department of Environment and Heritage 2004).
				Fishing effort	The total landings of the Broome Prawn Managed Fishery in the 2023 season were negligible (Koefoed *et al.* 2024a). The DPIRD 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 (Koefoed *et al.* 2024a).		
				Active licences/ vessels	Two boats undertook trial fishing activities in 2023 (Koefoed *et al.* 2024a).		
Exmouth Gulf Prawn Managed Fishery			✓	***Management area***	The Exmouth Gulf Prawn Managed Fishery operates within the sheltered waters of Exmouth Gulf. The fishery occupies a total area of 4,000 km², with only half of this area being trawled (Fletcher and Santoro 2015).		
				Species targeted		***Fishing methods***	***Fishing depth***
				Western king prawn (*Penaeus latisulcatus*), brown tiger prawn (*Penaeus esculentus*), blue endeavour prawn (*Metapenaeus endeavouri*) and banana prawn (*Penaeus merguinensis*).		The fishery uses low opening, otter prawn trawl systems (Koefoed *et al.* 2024b).	Information not available.
				Fishing effort	Previous years' catch based on State of the Fisheries annual reports provided by DPIRD: The Exmouth Gulf Prawn Managed Fishery landed 653 t in 2023, 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 (Koefoed *et al.* 2024b). The total catch comprised 306 t of brown tiger prawns, 200 t of western king prawns, and 147 t of blue endeavour prawns (Koefoed *et al.* 2024b). Stock status of landed species is considered sustainable – adequate (Koefoed *et al.* 2024b).		

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<table>
<tr><th rowspan="2">Fishery</th><th colspan="3">Woodside activity area</th><th rowspan="2">Description</th><th colspan="3">Fishery</th></tr>
<tr><th>Browse</th><th>NWS/ Scarborough</th><th>North West Cape</th></tr>
<tr><td></td><td></td><td></td><td></td><td>Active licences/ vessels</td><td colspan="3">The number of participating vessels is six (Koefoed et al. 2024b).</td></tr>
<tr><td rowspan="5">Gascoyne Demersal Scalefish Managed Fishery</td><td rowspan="5"></td><td rowspan="5"></td><td rowspan="5">✓</td><td>Management area</td><td colspan="3">The Gascoyne Demersal Scalefish Managed Fishery is between the southern Ningaloo Coast to south of Shark Bay, with a closure area at Point Maud to Tantabiddi (Western Australian Fishing Industry Council).[21]</td></tr>
<tr><td colspan="2">Species targeted</td><td>Fishing methods</td><td>Fishing depth</td></tr>
<tr><td colspan="2">Pink snapper (Chrysophrys auratus) and goldband snapper (Pristipomoides multidens).
Other demersal species caught include:
• tropical snappers
• emperors
• cods
• mulloway trevallies.</td><td>Mechanised handlines.</td><td>The target species inhabit waters deeper than 20 m (Jackson et al. 2021a).</td></tr>
<tr><td>Fishing effort</td><td colspan="3">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 145 t in 2023, 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 (Jackson et al. 2024).
The total of commercial catches comprised 48 t of pink snapper, 69 t of goldband snapper, and 28 t of other mixed species (Jackson et al. 2024).
The stock status for pink snapper is considered recovering, with goldband snapper considered sustainable – adequate (Jackson et al. 2024).</td></tr>
<tr><td>Active licences/ vessels</td><td colspan="3">Eight vessels fished during 2023, seven of which fished for more than ten days during peak pink snapper season (Jackson et al. 2024).</td></tr>
</table>

[21] https://www.wafic.org.au/fishery/gascoyne-demersal-scalefish-fishery/.

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Fishery	Woodside activity area			Description	Fishery		
	Browse	*NWS/ Scarborough*	*North West Cape*				
Kimberley Crab Managed Fishery (formerly Kimberley Developing Mud Crab Fishery)	✓			***Management area***	The 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).		
					Species targeted	***Fishing methods***	***Fishing depth***
					Brown mud crab (*Scylla olivacea*) and green mud crab (*Scylla serrata*).	Trap. Exemption holders use crab traps and drop nets in waters adjacent to native title lands (Johnston *et al.* 2023).	Information not available.
				Fishing effort	Previous years' catch based on State of the Fisheries annual reports provided by DPIRD: The total crab landed was 0.45 t in 2023, 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 2023, Kimberley Crab Managed Fishery landed a total catch of 0.45 t of brown mud crab, which represented the entire reported commercial mud crab catch (Harris *et al.* 2024). Mud crab species in the managed fishery is considered sustainable – adequate (Harris *et al.* 2024).		
				Active licences/ vessels	There is an allocation of 1,200 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 *Fish Resources Management Act*.		
Mackerel Managed Fishery	✓	✓	✓	***Management area***	The commercial fishery extends from the West Coast bioregion to the WA/NT border. There are three managed fishing areas: Area 1: Kimberley (121ºE to the WA/NT border); Area 2: Pilbara (114ºE to 121ºE) and Area 3: Gascoyne (27ºS to 114ºE) and West Coast (Cape Leeuwin to 27ºS) (Lewis *et al.* 2020).		
					Species targeted	***Fishing methods***	***Fishing depth***
					Spanish mackerel (*Scomberomorus commerson*), grey mackerel (*S. semifasciatus*) and other species from the genus *Scomberomorus*.	Trolling, baits or lures cast, jigging (Lewis *et al.* 2020).	Information not available.

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Fishery	Woodside activity area			Description	Fishery		
	Browse	*NWS/ Scarborough*	*North West Cape*				
				Fishing effort	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: 242 t in 2023, 213 t in 2022, 310 t in 2021, 290 t in 2020, 291 t in 2019, 214 t in 2018, 283 t in 2017, 276 t in 2016, 302 t in 2015 and 322 t in 2014 (Lewis and Rynvis 2024). The landed catch in 2023 was 225 t for Spanish mackerel and 16 t for grey mackerel (Lewis and Rynvis 2024). 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 Rynvis 2024). All species stocks are sustainable – adequate (Lewis and Rynvis 2024).		
				Active licences/ vessels	There were 15 vessels in 2023, primarily from May to November (Lewis and Rynvis 2024).		
Marine Aquarium Fish Managed Fishery	✓	✓	✓	***Management area***	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.* 2024b).		
				Species targeted		***Fishing methods***	***Fishing depth***
				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 1,500 species of marine aquarium fishes (Newman *et al.* 2024b).	The fishery is diver-based, which typically restricts effort to safe diving depths (less than 30 m).	Information not available.

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Fishery	Woodside activity area			Description	Fishery		
	Browse	*NWS/ Scarborough*	*North West Cape*				
				Fishing effort	Total catch for the Marine Aquarium Fish Managed Fishery in 2023 was 107,786 fishes and invertebrates, 18 t of coral, live rock and living sand, and 272 L of marine plants and live feed (Newman *et al.* 2024b). In 2022, the total catch for the Marine Aquarium Fish Managed Fishery 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.* 2024b). Dominant fish species caught in 2022 include spotted blenny (*Istiblennius meleagris*), scribbled angelfish (*Chaetodontoplus duboulayi*), black-axil chromis (*Chromis atripectoralis*), stripey (*Microcanthus strigatus*), Vachell's glassfish (*Ambassis vachellii*), margined coralfish (*Chelmon marginalis*), black-axil chromis (*Chromis atripectoralis*), and blue and yellow wrasse (*Anampses lennardi*) (Newman *et al.* 2024b). The breeding stocks of landed species are classified as sustainable – adequate (Newman *et al.* 2024b).		
				Active licences/ vessels	Twelve licences were active in 2023 across the Marine Aquarium Fish Managed Fishery and the Hermit Crab Fishery (Newman *et al.* 2024b).		
Nickol Bay Prawn Managed Fishery		✓		***Management area***	The Nickol Bay Prawn Managed Fishery operates in nearshore and offshore waters of the Pilbara region along the NWS. 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).		
				Species targeted		***Fishing methods***	***Fishing depth***
				Banana prawn (*Penaeus merguiensis*), western king prawn (*Penaeus latisulcatus*), brown tiger prawn (*Penaeus esculentus*) and blue endeavour prawn (*Metapenaeus endeavouri*).		Low opening, otter prawn trawl systems.	Information not available.
				Fishing effort	Previous years' catch based on State of the Fisheries annual reports provided by DPIRD: The Nickol Bay Prawn Managed Fishery landed 89 t in 2023, 51 t in 2022, 123.4 t in 2021, 202.4 t in 2020, 254 t in 2019 and 81 t in 2018 (Koefoed *et al.* 2024a). Of the total landings in 2023, landings were dominated by 68 t banana, 15 t brown tiger, 4 t western king and 1 t blue endeavour prawns (Koefoed *et al.* 2024a). The banana prawn stock status within the Nickol Bay Prawn Managed Fishery is considered sustainable – adequate (Koefoed *et al.* 2024a).		

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Fishery	Woodside activity area			Description	Fishery		
	Browse	*NWS/ Scarborough*	*North West Cape*				
				Active licences/ vessels	There were five participating vessels in 2023 (Koefoed *et al.* 2024a).		
Northern Demersal Scalefish Managed Fishery	✓			***Management area***	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; Smith, *et al.* 2025).		
				Species targeted		***Fishing methods***	***Fishing depth***
				Goldband snapper (*Pristipomoides multidens*), blue-spotted emperor (*Lethrinus punctulantus*), red emperor (*Lutjanus sebae*) and rankin cod (*Epinephelus multinotatus*).		Handline, dropline and fish trap.	Information not available.
				Fishing effort	Previous years' catch based on State of the Fisheries annual reports provided by DPIRD: The Northern Demersal Scalefish Managed Fishery landed 1,450 t in 2023, 1,458 t in 2022, 1,544 t in 2021, 1,419 t in 2020, 1,507 t in 2019, and 1,297 t in 2018 (Wakefield *et al.* 2024). In 2023, most of the catch was landed from Zone B, with 1,233 t in 2023. The 2023 catch of jobfish group (*Pristipomoides spp*.) was 503 t, 91% of which was goldband snapper (Wakefield *et al.* 2024). The stock status of landed species in the managed fishery is classified as sustainable – adequate (Wakefield *et al.* 2024).		
				Active licences/ vessels	Eight active vessels in 2023 (Wakefield *et al.* 2024).		
Octopus Interim Managed Fishery	-	-	-	***Management area***	The Octopus Interim Managed Fishery operates from Kalbarri Cliffs in the north to Esperance in the south.		
				Species targeted		***Fishing methods***	***Fishing depth***
				Octopus djinda, which is closely related to *Octopus tetricus*.		Primary method is baited octopus trap (combination of active trapping via trigger mechanisms, and passive trapping – shelter traps) (Strain *et al.* 2024d).	Catches typically occur in nearshore waters of less than 20 m depths, but traps may be deployed in depths of up to 50 m (Desfosses *et al.* 2024.

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Fishery	Woodside activity area			Description	Fishery		
	Browse	*NWS/ Scarborough*	*North West Cape*				
				Fishing effort	Previous years' catch based on State of the Fisheries annual reports provided by DPIRD: Commercial catch for the Octopus Interim Managed Fishery was 777 t in 2023, 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 (Strain *et al.* 2024d). In 2023, the total catch of octopus of 777 t live weight was a 4.4% increase from 2022 with a total catch of 744 t, due to one new vessel and increased use of trap allocations (Strain *et al.* 2024d). Octopus stock status in 2023 is considered sustainable – adequate (Strain *et al.* 2024d).		
				Active licences/ vessels	Twenty-eight active vessels in 2023 (Strain *et al.* 2024d).		
Onslow Prawn Managed Fishery		✓		***Management area***	The Onslow Prawn Managed Fishery encompasses a portion of the continental shelf off the Pilbara.		
				Species targeted		***Fishing methods***	***Fishing depth***
				Western king prawns (*Penaeus esculentus*), brown tiger prawns (*Penaeus esculentus*), blue endeavour prawns (*Metapenaeus endeavouri.*		Low opening, otter prawn trawl systems.	Fishery and or fishing activity overlaps the Beadon Creek dredging scope (Sporer *et al.* 2015).
				Fishing effort	The total landings for the Onslow Prawn Managed Fishery for the 2023 and 2022 seasons are not available due to data confidentiality (Koefoed *et al.* 2024a). In 2021, the total catch was less than the target catch range of 60 t (Kangas *et al.* 2023a). Thirty-seven 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 (Koefoed *et al.* 2024a).		
				Active licences/ vessels	One vessel was active in 2023 (Koefoed *et al.* 2024a).		

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Fishery	Woodside activity area			Description	Fishery		
	Browse	*NWS/ Scarborough*	*North West Cape*				
Pearl Oyster Managed Fishery	✓	✓	✓	***Management area***	The Pearl Oyster Managed Fishery is 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 *Pearling Act 1990* (Koefoed *et al.* 2024a).		
					Species targeted	***Fishing methods***	***Fishing depth***
					Silver lipped pearl oysters (*Pinctada maxima*).	Drift diving.	Fishing effort is mostly focused in shallow coastal waters (10 to 15 m depth), with a maximum depth of 35 m (Lulofs *et al.* 2002).
				Fishing effort	In 2023, catch was taken from Zones 2 and 3 only with no fishing in Zone 1, which has not been fished from 2017 to 2023 (Koefoed *et al.* 2024a). In 2023, the number of wild-caught pearl oysters was 798,217 (Koefoed *et al.* 2024a). Total dive hours increased in 2023 from 10,641 hours in 2022 to 10,906 hours due to a 28% increase in harvest (Hart *et al.* 2023b). Zones 1 to 3 are all considered to be sustainable – adequate (Koefoed *et al.* 2024a).		
				Active licences/ vessels	Five active vessels in 2023 (Koefoed *et al.* 2024a).		
Pilbara Crab Managed Fishery		✓	✓	***Management area***	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 (Newman *et al.* 2024a). 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 2018).		
					Species targeted	***Fishing methods***	***Fishing depth***
					Blue swimmer crab (*Portunus armatus)* (Johnston *et al.* 2021).	Hourglass traps (Johnston *et al.* 2021).	Up to 50 m deep (Harris *et al.* 2024).

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Fishery	Woodside activity area			Description	Fishery		
	Browse	*NWS/ Scarborough*	*North West Cape*				
				Fishing effort	Previous years' catch based on State of the Fisheries annual reports provided by DPIRD: Catch for the Pilbara Crab Managed Fishery was 23.8 t in 2023, 11.2 t in 2022, 9.7 t in 2021, 0.6 t in 2020 and 19.3 t in 2019 (Harris *et al.* 2024). The total catch in 2023 was a substantial increase from the 2.1 t caught in 2020, which was the lowest landed catch in 20 years (Harris *et al.* 2024). In 2023 the blue swimmer crab catch accounted for about 5% of the State commercial catch, all taken by this fishery (Harris *et al.* 2024). The blue swimmer crab stock status is considered sustainable – adequate (Harris *et al.* 2024).		
				Active licences/ vessels	No information currently available.		
Pilbara Trawl (Interim) Managed Fishery		✓		***Management area***	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.* 2024; Smith, *et al.* 2025).		
				Species targeted		***Fishing methods***	***Fishing depth***
				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 (Trinnie *et al.* 2025).	Demersal trawl. The fishery operates with standard stern trawling gear (single net with extension sweeps) (Wakefield *et al.* 2024).	The fishery operates in waters between 50 and 200 m depth (Allen *et al.* 2014; Newman *et al.* 2015).

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Fishery	Woodside activity area			Description	Fishery		
	Browse	*NWS/ Scarborough*	*North West Cape*				
				Fishing effort	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 1,907 t in 2023, 1,784 t in 2022,1,928 t in 2021, 2,087 t in 2020, 2,142 t in 2019, 1,996 t in 2018, 1,780 t in 2017, 1,529 t in 2016, 1,172 t in 2015 and 1,105 t in 2014 (Wakefield *et al.* 2024). The fishery landed 74% of total commercial catches of the demersal scale fish in the Pilbara in 2023. Increasing catch rates and fishing mortality spawning biomass estimates indicate imposed effort reductions since 2008 have resulted in increased fish abundance and stock rebuilding in the fishery (Wakefield *et al.* 2024). In 2023, the total catch of the indicator species red emperor in the Pilbara Demersal Scalefish Fishery (includes the Pilbara trawl, trap and line fisheries) was 150 t, which is within the acceptable catch range (Wakefield *et al.* 2024). The biological stocks for the Pilbara Demersal Scalefish Fishery are classified as unsustainable – inadequate (Wakefield *et al.* 2024).		
				Active licences/ vessels	Four active vessels in the trawl sector in 2023 (Wakefield *et al.* 2024).		
Pilbara Line Managed Fishery		✓	✓	***Management area***	The Pilbara Line Managed Fishery boat licences are permitted to operate anywhere within 'Pilbara water', bounded by a line starting 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 (Wakefield *et al.* 2024; Smith *et al.* 2025).		
				Species targeted		***Fishing method***	***Fishing depths***
				The Pilbara Line Managed Fishery catch is made up around 45 to 50 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 (Trinnie *et al.* 2025).		Demersal long line.	Information not available.

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Fishery	Woodside activity area			Description	Fishery		
	Browse	*NWS/ Scarborough*	*North West Cape*				
				Fishing effort	Based on State of the Fisheries annual reports provided by DPIRD: The Pilbara Line Managed Fishery caught 114 t in 2023, 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.* 2024). The total catch of 104 t in 2023 made up 4% of the total catch by the Pilbara Demersal Scalefish Fishery and was within the acceptable catch range (Wakefield *et al.* 2024).		
				Active licences/ vessels	Six active vessels in 2023 (Wakefield *et al.* 2024).		
Pilbara Trap Managed Fishery		✓	✓	***Management area***	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 (Wakefield *et al.* 2024; Smith *et al.* 2025).		
				Species targeted		***Fishing methods***	***Fishing depths***
				The catch is made up of around 45 to 50 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 (Trinnie *et al.* 2025).		Demersal fish traps.	About 30 m isobath to 200 m isobath (DPIRD n.d.).
				Fishing effort	Previous years' catch based on State of the Fisheries annual reports provided by DPIRD: The Pilbara Trap Managed Fishery caught 573 t in 2023, 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.* 2024). The total catch of 573 t in 2023 made up 22% of the total catch by the Pilbara Demersal Scalefish Fishery and exceeded the acceptable catch range for the total catch (Wakefield *et al.* 2024).		
				Active licences/ vessels	Three active vessels in the trap sector in 2023 (Wakefield *et al.* 2024).		

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Fishery	Woodside activity area			Description	Fishery		
	Browse	*NWS/ Scarborough*	*North West Cape*				
Shark Bay Beach Seine and Mesh Net Managed Fishery	-	-	-	***Management area***	The Shark Bay Beach Seine and Mesh Net Managed Fishery operates from Denham.		
				Species targeted		***Fishing methods***	***Fishing depth***
				Whiting (yellowfin *Sillago schomburgkii*), sea mullet (*Mugil cephalus*), tailor (*Pomatomus saltatrix*) and western yellowfin bream (*Acanthopagrus australis*).		Beach seine and mesh net.	Information not available.
				Fishing effort	Previous years' catch based on State of the Fisheries annual reports provided by DPIRD: Total catch was 131 t in 2023, 131 t in 2022,135 t in 2021, 171 t in 2020, 175 t in 2019 and 176 t in 2018 (Jackson and Nolan 2024). Of the total catch in 2023, 80 t consisted of whiting, 25 t of sea mullet, 13 t of western yellowfin bream, 8 t of tailor, and 0.5 t of pink snapper (Jackson and Nolan 2024). The stock status of targeted species is sustainable – adequate (Jackson and Nolan 2024).		
				Active licences/ vessels	Four vessels were active in 2022 (Jackson and Nolan 2024).		
Shark Bay Crab Managed Fishery	-	-	-	***Management area***	The Shark Bay Crab Managed Fishery operates within the NWMR. It is based primarily in Carnarvon but operates throughout the waters of Shark Bay.		
				Species targeted		***Fishing methods***	***Fishing depth***
				Blue swimmer crab (*Portunus armatus*).		Trap and trawl.	Information not available.
				Fishing effort	Previous years' catch based on State of the Fisheries annual reports provided by DPIRD: The fishery landed 369 t in 2023, 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 (Chandrapavan *et al.* 2024). The fishery closed for 18 months in 2012 and 2013 to promote stock recovery after a series of adverse environmental conditions between 2010 and 2011 (Chandrapavan *et al.* 2024). Limited commercial fishing resumed under a national quota management system between 2013 and 2017 (Chandrapavan *et al.* 2024). The current stock status is sustainable – adequate (Chandrapavan *et al.* 2024).		
				Active licences/ vessels	In the trawl sector in 2023 there were three trap vessels and 21 trawl vessels (Chandrapavan *et al.* 2023a).		

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<tr><th>Browse</th><th>NWS/ Scarborough</th><th>North West Cape</th></tr>
<tr><td rowspan="5">Shark Bay Prawn and Scallop Managed Fishery</td><td rowspan="5">-</td><td rowspan="5">-</td><td rowspan="5">-</td><td>Management area</td><td colspan="3">The Shark Bay Prawn Managed Fishery is the highest producing WA fishery for prawns. The Shark Bay Scallop Managed Fishery is usually WA’s most valuable scallop fishery (Kangas et al. 2021).</td></tr>
<tr><td colspan="2">Species targeted</td><td>Fishing methods</td><td>Fishing depth</td></tr>
<tr><td colspan="2">Western king prawn (Penaeus latisulcatus), brown tiger prawn (Penaeus esculentus), endeavour prawn (Metapenaeus endeavouri), coral prawn (Metapenaeopsis sp.) and saucer scallop (Amusium balloti).</td><td>Low-opening otter trawls.</td><td>Information not available.</td></tr>
<tr><td>Fishing effort</td><td colspan="3">Previous years’ catch based on State of the Fisheries annual reports provided by DPIRD: The Shark Bay Prawn Managed Fishery landed 866 t in 2023, 831 t in 2022, 1,303 t in 2021, 1,268 t in 2020, 1,214 t in 2019, 1,091 t in 2018 and 1,608 t in 2017 (Koefoed et al. 2024c).
Of the total landings, 640 t comprised of western king, 226 t of brown tiger, and 1 t of blue endeavour prawns (Koefoed et al. 2024c).
The Shark Bay Scallop Managed Fishery has been managed under a quota management framework since the fishery reopened in 2015 (Wilkin et al. 2024). Scallop landings for Shark Bay were 172 t (861 t meat weight) in 2023, 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 (Koefoed et al. 2024c; Wilkin et al. 2024).</td></tr>
<tr><td>Active licences/ vessels</td><td colspan="3">There were 12 licenced vessels in the 2023 season, a decrease from the 2022 season which had 18 licenced vessels (Koefoed et al. 2024c).
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 nine active vessels (Wilkin et al. 2024).</td></tr>
</table>

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<tr><th>Browse</th><th>NWS/ Scarborough</th><th>North West Cape</th></tr>
<tr><td rowspan="5">South Coast Crustacean Managed Fishery</td><td rowspan="5">-</td><td rowspan="5">-</td><td rowspan="5">-</td><td>Management area</td><td colspan="3">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.</td></tr>
<tr><td colspan="2">Species targeted</td><td>Fishing methods</td><td>Fishing depth</td></tr>
<tr><td colspan="2">Southern rock lobster (Jasus edwardsii), western rock lobster (Panulirus cygnus), giant crab (Pseudocarcinus gigas), crystal crab (Chaceon albus) and champagne crab (Hypothalassia acerba).</td><td>Pots.</td><td>Information not available.</td></tr>
<tr><td>Fishing effort</td><td colspan="3">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 34.8 in 2023, 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 2023, the total crustacean landings comprised champagne crabs (2.5 t), southern rock lobsters (13.8 t), giant crabs (5.2 t), western rock lobsters (5.5 t), and crystal crabs (7.8 t) (How et al. 2023d).
The stock status is sustainable – adequate (Truffley and Wiberg 2024a).</td></tr>
<tr><td>Active licences/ vessels</td><td colspan="3">The South Coast Crustacean Managed Fishery is based on mobile vessels that employ a skipper and one to three crew. In 2023, there were nine participating vessels (Truffley and Wiberg 2024a).</td></tr>
</table>

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<tr><th>Browse</th><th>NWS/ Scarborough</th><th>North West Cape</th></tr>
<tr><td rowspan="5">South Coast Purse Seine Managed Fishery</td><td rowspan="5">-</td><td rowspan="5">-</td><td rowspan="5">-</td><td>Management area</td><td colspan="3">The South Coast Purse Seine Managed Fishery is active in coastal waters between Cape Leeuwin and the SA 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 Moses 2024a).</td></tr>
<tr><td colspan="2">Species targeted</td><td>Fishing methods</td><td>Fishing depth</td></tr>
<tr><td colspan="2">Small pelagic finfish.
Australian sardine (pilchards, Sardinops sagax), yellowtail scad (Trachurus novaezelandiae), Australian anchovy (Engraulis australis), scaly mackerel (Sardinella lemuru) and maray (Etrumeus jacksoniensis).
Entitled to take sandy sprat (Hyperlophus vittatus) and blue sprat (Spratelloides robustus), but not reported caught since 1993–94.</td><td>Purse seine nets from vessels.</td><td>Information not available.</td></tr>
<tr><td>Fishing effort</td><td colspan="3">Previous years’ catch based on State of the Fisheries annual reports provided by DPIRD: The South Coast Purse Seine Managed Fishery landed 1,622 t in 2023, 1,636 t in 2022, 1,255 t in 2020–21, 1,498 t in 2019–20, 1,064 t in 2018–19 and 2,168 t in the 2017–18 season.
The total catch in 2023, consisted of >99% of Australian sardines (Norriss and Moses 2024a). Fishing effort in 2023 was 460 boat days (Norriss and Moses 2024a).
The stock status for the Australian sardine is considered sustainable – adequate (Norriss and Moses 2024a).</td></tr>
<tr><td>Active licences/ vessels</td><td colspan="3">Six active vessels in 2022 (Norriss and Moses 2024a).</td></tr>
</table>

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Fishery	Woodside activity area			Description	Fishery		
	Browse	*NWS/ Scarborough*	*North West Cape*				
South West Coast Salmon Managed Fishery	✓	✓	✓	***Management area***	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.		
				Species targeted		***Fishing methods***	***Fishing depth***
				Western Australian salmon (*Arripis truttaceus*).		Beach seine nets.	Information not available.
				Fishing effort	No fishing occurs north of the Perth metropolitan area, despite the managed fishery boundary extending to Cape Beaufort (WA/NT border), as advised by Western Australian Fishing Industry Council. The commercial catch for the entire West Coast Nearshore and Estuarine Finfish resource was 267.5 t in 2023. The total catch of WA salmon was 28.4 t in 2023, a decrease from 82.9 t in 2022. The WA salmon stock status is considered sustainable – adequate (Yeoh *et al.* 2024).		
				Active licences/ vessels	The number of active vessels or licences in 2023 is unknown, but there were about 12 commercial fishers employed in 2018 (Yeoh *et al.* 2024).		
South-west Trawl Managed Fishery	-	-	-	***Management area***	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).		
				Species targeted		***Fishing methods***	***Fishing depth***
				Scallops (*Ylistrum balloti,* formerly *Amusium balloti*) and associated byproducts. In years of low scallop catches, licensees may use trawl gear to target finfish species.		Trawl.	Information not available.
				Fishing effort	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 2023, the South-west Trawl Managed Fishery reported 62 t (Fisher *et al.* 2024). The stock status of scallops is considered sustainable – adequate (Wilkin *et al.* 2023a).		
				Active licences/ vessels	Five vessels fished in 2023 (Fisher *et al.* 2024).		

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<tr><th>Browse</th><th>NWS/ Scarborough</th><th>North West Cape</th></tr>
<tr><td rowspan="5">Specimen Shell Managed Fishery</td><td rowspan="5">✓</td><td rowspan="5">✓</td><td rowspan="5">✓</td><td>Management area</td><td colspan="3">The Specimen Shell Managed Fishery encompasses the entire WA coastline, but effort is concentrated in areas adjacent to population centres such as Broome, Exmouth, Shark Bay, Geraldton, Perth, Mandurah, the Capes area and Albany (Bruce et al. 2024). 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 (Bruce et al. 2024).</td></tr>
<tr><td colspan="2">Species targeted</td><td>Fishing methods</td><td>Fishing depth</td></tr>
<tr><td colspan="2">The Specimen Shell Managed Fishery targets specimen shells for display, collection, cataloguing and sale.
About 200 species of specimen shell are collected each year. Some effort focuses on mollusc families that are most popular with shell collectors, such as cowries, cones, murexes and volutes (Bruce et al. 2024).</td><td>Collection is predominantly by hand when diving or wading in shallow coastal waters, though in deeper water collection may be conducted by remotely operated vehicles (limited to one per licence).</td><td>For collection by hand (diver-based), this typically restricts effort to safe diving depths (less than 30 m).
Remotely operated vehicle collection could enable depths up to 300 m (Bruce et al. 2024).</td></tr>
<tr><td>Fishing effort</td><td colspan="3">A total of 5,807 specimen shells were collected in 2023, distributed over 140 species (Bruce et al. 2024). A total of 5,074 specimen shells were collected in 2021, distributed over 200 species (Hart et al. 2023b). Total number of specimen shells collected in 2020 was 4,258 shells across 206 species (Hart et al. 2021).
Stocks of landed species in the Specimen Shell Managed Fishery are classified as sustainable – adequate (Bruce et al. 2024).</td></tr>
<tr><td>Active licences/ vessels</td><td colspan="3">An exemption for the trial of remotely operated underwater vehicles (limited to one per licence) was in place during 2023 (Bruce et al. 2024).
There was a total of 30 licences in the fishery, of which 18 licences were fished in 2023 (Bruce et al. 2024). Effort in 2023 was 452 days, which was 64 fishing days more than reported in 2022 (Bruce et al. 2024).</td></tr>
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Fishery	Woodside activity area			Description	Fishery		
	Browse	*NWS/ Scarborough*	*North West Cape*				
The South Coast Salmon Managed Fishery	-	-	-	***Management area***	The South Coast Salmon Managed Fishery is one of two fisheries operating in the South Coast bioregion that target nearshore and estuarine finfish.		
				Species targeted		***Fishing methods***	***Fishing depth***
				WA salmon (*Arripis truttaceus*), southern school whiting (*Sillago bassensis*), Australian herring (*Arripis georgianus*), King George whiting (*Sillaginodes punctatus*), sea mullet (*Mugil cephalus*), estuary cobbler (*Cnidoglanis macrocephalus*) and black bream (*Acanthopagrus butcheri*).		Beach seines, haul nets and gill nets.	Information not available.
				Fishing effort	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 238.6 t in 2023, 267.6 t for 2022, 275.1 t in 2021 and 334 t in 2020. Of this, the South Coast Salmon Managed Fishery landed 6.7 t of WA salmon in 2023, 54.5 t in 2022, 48.5 t in 2021, 76 t in 2020 and 56.5 t in 2019. The stock status of target species is sustainable – adequate (Yeoh *et al.* 2024).		
				Active licences/ vessels	Catch was recorded against eight licences in 2023 (Yeoh *et al.* 2024).		
Western Australian Abalone Managed Fishery	✓	✓	✓	***Management area***	The Western Australian Abalone Managed Fishery includes all coastal waters from the WA/SA border to the WA/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 to 4 and the Roe's abalone fishery operates in areas 1, 2, 5, 6, 7 and 8 (Strain *et al.* 2024c).		
				Species targeted		***Fishing methods***	***Fishing depth***
				Greenlip abalone (*Haliotis laevigata*), brownlip abalone (*Haliotis conicopora*) and Roe's abalone (*Haliotis roei*).		Divers.	Distribution to 5 m depth for Roe's abalone and 40 m depth for greenlip/brownlip abalone (Strain *et al.* 2024c).

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Fishery	Woodside activity area			Description	Fishery		
	Browse	*NWS/ Scarborough*	*North West Cape*				
				Fishing effort	Previous years' catch based on State of the Fisheries annual reports provided by DPIRD: The total catch for greenlip and brownlip abalone in 2023 was 41.4 t whole weight (27.3 t greenlip and 14.4 t brownlip), (Strain *et al.* 2024b), a decrease from 2022 which was 54.5 t whole weight (37.2 greenlip t and 17.3 t brownlip) (Strain *et al.* 2024b). The total catch in 2021 was the lowest catch recorded for greenlip/brownlip in 53 years (Strain *et al.* 2023). The Roe's abalone resource catch for 2023 was 25.9 t, a 10.4% decrease from the previous season (Strain *et al.* 2024c). In 2022 was 28.9 t whole weight, an increase from 25.6 t whole weight in 2021 (Strain *et al.* 2024c). The stock status of greenlip abalone is considered inadequate and brownlip abalone is adequate (Strain *et al.* 2024b). The stock status of the Roe's abalone is considered adequate (Strain *et al.* 2024c).		
				Active licences/ vessels	There were 15 registered vessels in 2023 for greenlip and brownlip abalone (Strain *et al.* 2024b) and 21 for Roe's abalone, but only a small proportion was active (Strain *et al.* 2024c).		
West Coast Beach (Beach Bait Fish Net) Managed Fishery	-	-	-	***Management area***	Primarily active in the Bunbury areas in the SWMR, operates between 26° and 33°S.		
				Species targeted		***Fishing methods***	***Fishing depth***
				Whitebait.		Beach-based haul nets.	Information not available.
				Fishing effort	Previous years' catch based on State of the Fisheries annual reports provided by DPIRD: The total catch of whitebait in 2023 was 18 t, a decrease from 23.3 t in 2022 (Yeoh *et al.* 2024). The fishery continues to be environmentally limited, with stocks still recovering from the 2010–11 marine heat wave (Yeoh *et al.* 2024). The stock status is inadequate – environmentally limited (Yeoh *et al.* 2024).		
				Active licences/ vessel:	The number of active vessels in 2023 is unknown, but five licensees reported landings of whitebait in 2011 (Yeoh *et al.* 2024).		

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<tr><th>Browse</th><th>NWS/ Scarborough</th><th>North West Cape</th></tr>
<tr><td rowspan="5">West Coast Deep Sea Crustacean Managed Fishery</td><td rowspan="5">✓</td><td rowspan="5">✓</td><td rowspan="5">✓</td><td>Management area</td><td colspan="3">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.</td></tr>
<tr><td colspan="2">Species targeted</td><td>Fishing methods</td><td>Fishing depth</td></tr>
<tr><td colspan="2">The fishery targets deepwater crustaceans:
crystal (snow) crab (Chaceon albus)
giant (king) crab (Pseudocarcinus gigas)
champagne (spiny) crabs (Hypothalassia acerba).
Catches are dominated by crystal crabs, of which 99% of their total allowable catch was landed in 2020 (Tuffley and Wiberg 2024b).</td><td>Baited pots, or traps, are operated in long lines that have between 80 and 180 pots attached to a main line marked by a float at each end.</td><td>Deeper than 150 m (and mostly at depths of between 500 and 800 m). Most of the commercial crystal crab catch is taken in depths of 500 to 800 m (Western Australian Fishing Industry Council). [22]</td></tr>
<tr><td>Fishing effort</td><td colspan="3">Previous years' catch based on State of the Fisheries annual reports provided by DPIRD: The total landings were 124.8 t in 2023, 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.
The total landings of crustaceans in 2023 were dominated by crystal crabs (123.1 t). A further 1.7 t of champagne crabs and 136.5 kg of giant crab were also landed in 2023 (Tuffley and Wiberg 2024b).
The stock status for crystal crab is considered adequate. However, it is likely the stock biomass is near or below its threshold level, but above its limit level (Tuffley and Wiberg 2024b).</td></tr>
<tr><td>Active licences/ vessel</td><td colspan="3">There were seven licence holders with three vessels active in 2023 (Tuffley and Wiberg 2024b).</td></tr>
</table>

[22] https://www.wafic.org.au/fishery/west-coast-deep-sea-crustacean-fishery/

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<tr><td rowspan="5">West Coast Demersal Gillnet and Demersal Longline (Interim) Managed Fishery</td><td rowspan="5">-</td><td rowspan="5">-</td><td rowspan="5">-</td><td>Management area</td><td colspan="3">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).</td></tr>
<tr><td colspan="2">Species targeted</td><td>Fishing methods</td><td>Fishing depth</td></tr>
<tr><td colspan="2">Gummy shark (Mustelus antarcticus), dusky shark (Carcharhinus obscurus), whiskery shark (Furgaleus macki) and sandbar shark (C. plumbeus). Scalefish are a byproduct.</td><td>Gillnet and longline.</td><td>Information not available.</td></tr>
<tr><td>Fishing effort</td><td colspan="3">Catches of elasmobranchs and fishing effort for the West Coast Demersal Gillnet and Demersal Longline (Interim) Managed Fishery peaked during the late 1980s and early 1990s and have stabilised at lower levels in recent years (Braccini and Watt 2021).
Previous years’ values from State of the Fisheries annual reports provided by DPIRD: Estimated annual value to the fishery was $0.19 million for 2022–23, $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.
Stock status for the gummy and whiskery shark is considered sustainable – adequate, with the dusky and sandbar shark status sustainable – recovering (Braccini and Rynvis 2024).</td></tr>
<tr><td>Active licences/ vessel:</td><td colspan="3">Vessel and licence data are not available. There were about five to six skippers and crew employed during 2022–23 (Braccini and Rynvis 2024).</td></tr>
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<tr><th>Browse</th><th>NWS/ Scarborough</th><th>North West Cape</th></tr>
<tr><td rowspan="6">West Coast Demersal Scalefish Interim Managed Fishery</td><td rowspan="6">-</td><td rowspan="6">-</td><td rowspan="6">-</td><td>Management area</td><td colspan="3">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.</td></tr>
<tr><td colspan="2">Species targeted</td><td>Fishing methods</td><td>Fishing depth</td></tr>
<tr><td colspan="2">The resource comprises over 100 species, including:
baldchin groper (Choerodon rubescens)
dhufish (Glaucosoma hebraicum)
pink snapper (Pagrus auratus).</td><td>Lines.</td><td>Information not available.</td></tr>
<tr><td>Fishing effort</td><td colspan="3">Previous years’ catch based on State of the Fisheries annual reports provided by DPIRD: The West Coast Demersal Scalefish Interim Managed Fishery retained 233 t in 2023, 240 t in 2022, 259 t in 2021, 227 t in 2020, 254 t in 2019 and 230 t in 2018.
Management began 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. 2024).</td></tr>
<tr><td>Active licences/ vessels</td><td colspan="3">Twenty-eight licenced vessels operated in 2023 (Fisher et al. 2024).</td></tr>
</table>

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Fishery	Woodside activity area			Description	Fishery		
	Browse	*NWS/ Scarborough*	*North West Cape*				
West Coast Purse Seine Managed Fishery	-	-	-	***Management area***	Most of the catch in the West Coast Purse Seine Managed fishery is taken from between Cape Leeuwin and Geraldton. This region is separated into three zones: Northern Development, Perth Metropolitan, and Southern Development zones (Norriss and Moses 2024b).		
				Species targeted		***Fishing methods***	***Fishing depth***
				Small pelagic finfish such as: • scaly mackerel (*Sardinella lemuru*) • pilchards (*Sardinops sagax*) • Australian anchovy (*Engraulis australis*) • yellowtail scad (*Trachurus novaezelandiae*) • maray (*Etrumeus teres*).	Purse seine.	Information not available.
				Fishing effort	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 licences was 214 t in 2023, 259 t in 2022, 504 t in 2021, 493 t in 2020, 527 t in 2019 and 340 t in 2018. In 2023, the total catch consisted of 66% scaley mackerel and 31% Australian sardine (Norriss and Moses 2024b). Both the scaley mackerel and Australian sardine have a stock status classified as sustainable – adequate (Norriss and Moses 2024b).		
				Active licences/ vessels	Three active vessels in 2022 (Norriss and Blazeski 2023d).		
West Coast Rock Lobster Managed Fishery			✓	***Management area***	The West Coast Rock Lobster Managed 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.		
				Species targeted		***Fishing methods***	***Fishing depth***
				Western rock lobster (*Panulirus cygnus).*		Baited pots.	Information not available.

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Fishery	Woodside activity area			Description	Fishery		
	Browse	*NWS/ Scarborough*	*North West Cape*				
				Fishing effort	Previous years' catch based on State of the Fisheries annual reports provided by DPIRD: The total catch for the West Coast Rock Lobster Managed Fishery was 4,361 t in 2023 (de Lestang and Walsh 2024). 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 6,334 t and the 18-month 2020–21 season was 9,132 t. Commercial landings over the traditional 12-month season (15 Jan 2020 to 14 Jan 2021) were 5,696 t. The fishery landed 6,397 t in 2019 and 6,400 t in 2018 and 2017. The stock status for the western rock lobster is classified as sustainable – adequate (de Lestang and Walsh 2024).		
				Active licences/ vessel:	Two hundred and eighteen vessels were active in the 2023 season (de Lestang and Walsh 2024).		
Western Australia Joint Authority Northern Shark Fishery	✓			***Management area***	The Western Australia Joint Authority Northern Shark Fishery extends from longitude 12'° 45'E to the NT border.		
				Species targeted		***Fishing methods***	***Fishing depth***
				Blacktip shark (*Carcharhinus tilstoni*) and spot-tail shark (*Carcharhinus sorrah*).		Gillnets and longlines.	Information not available.
				Fishing effort	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 2008–09 (Braccini and Watt 2023; Newman *et al.* 2024a).		
				Active licences/ vessels	Information not available.		

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<table>
<tr><th rowspan="2">Fishery</th><th colspan="3">Woodside activity area</th><th rowspan="2">Description</th><th colspan="3">Fishery</th></tr>
<tr><th>Browse</th><th>NWS/ Scarborough</th><th>North West Cape</th></tr>
<tr><td rowspan="5">Western Australian Sea Cucumber Fishery (formerly Beche-de-mer Fishery)</td><td rowspan="5">✓</td><td rowspan="5">✓</td><td rowspan="5">✓</td><td>Management area</td><td colspan="3">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). In 2023, Shark Bay was fished for the fourth consecutive year (Strain et al. 2024a).</td></tr>
<tr><td colspan="2">Species targeted</td><td>Fishing methods</td><td>Fishing depth</td></tr>
<tr><td colspan="2">Two main species: sandfish (Holothuria scabra) and redfish (Actinopyga echinites).</td><td>Diving and wading. Collected by hand.</td><td>The targeted species typically inhabit nearshore in shallow depths.</td></tr>
<tr><td>Fishing effort</td><td colspan="3">Previous years’ catch based on State of the Fisheries annual reports provided by DPIRD: The Western Australian Sea Cucumber Fishery caught 126.1 t in 2023, 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 (Strain et al. 2024a).
Sandfish were collected from the Kimberley only, which was last fished in 2017 (Hart et al. 2023a).
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. 2023a).
The stock status of sandfish, in the Kimberly, and red fish species landed are considered sustainable – adequate, while the sandfish in the Pilbara are not sustainable – inadequate, thus a closure of the Pilbara Sandfish fishery was implemented for 2023 to 2026 (Strain et al. 2024a).</td></tr>
<tr><td>Active licences/ vessels</td><td colspan="3">Three vessels operating in 2023 (Strain et al. 2024a).</td></tr>
</table>

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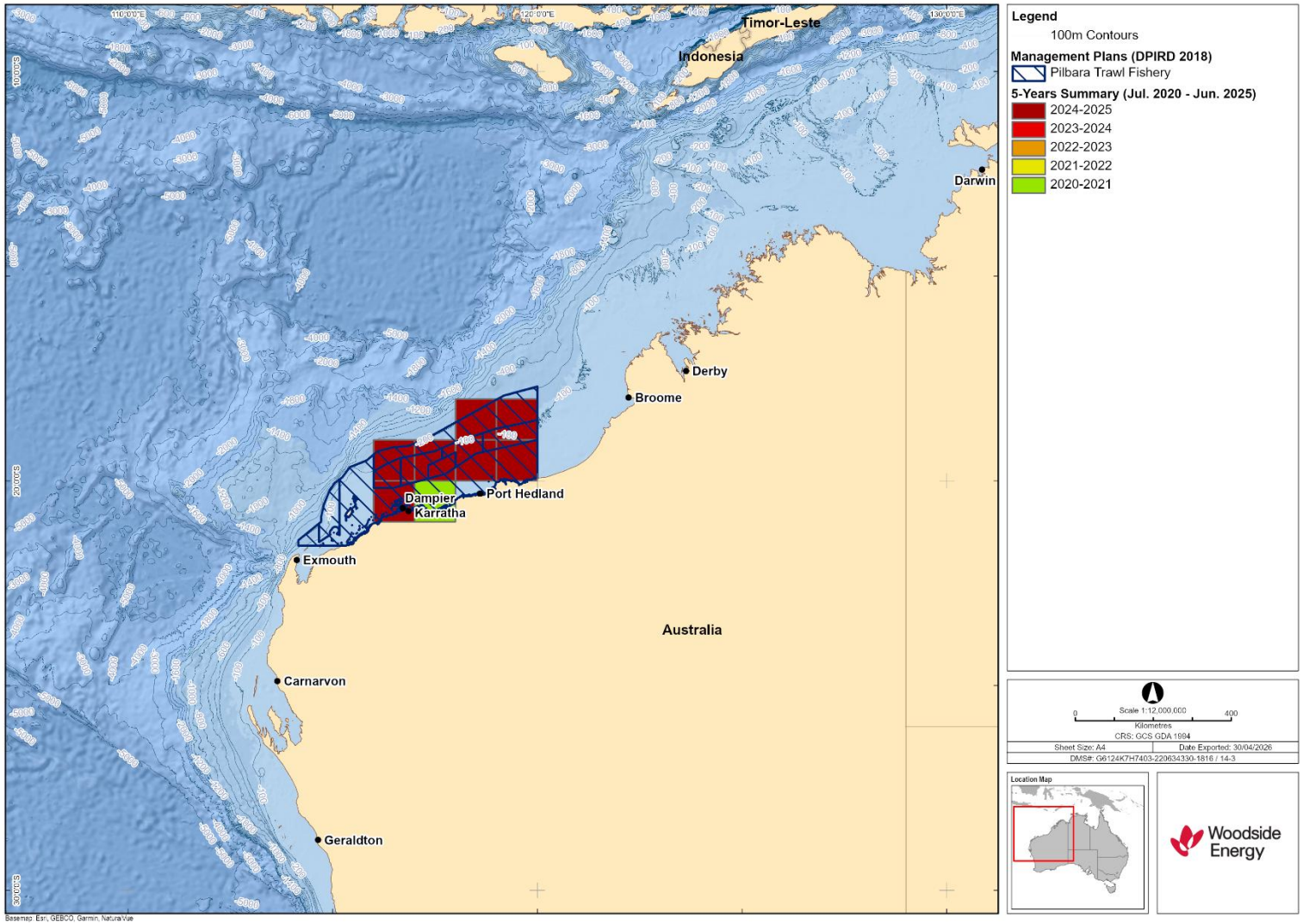


Figure 13-7: Pilbara Fish Trawl (Interim) Managed Fishery five-year average

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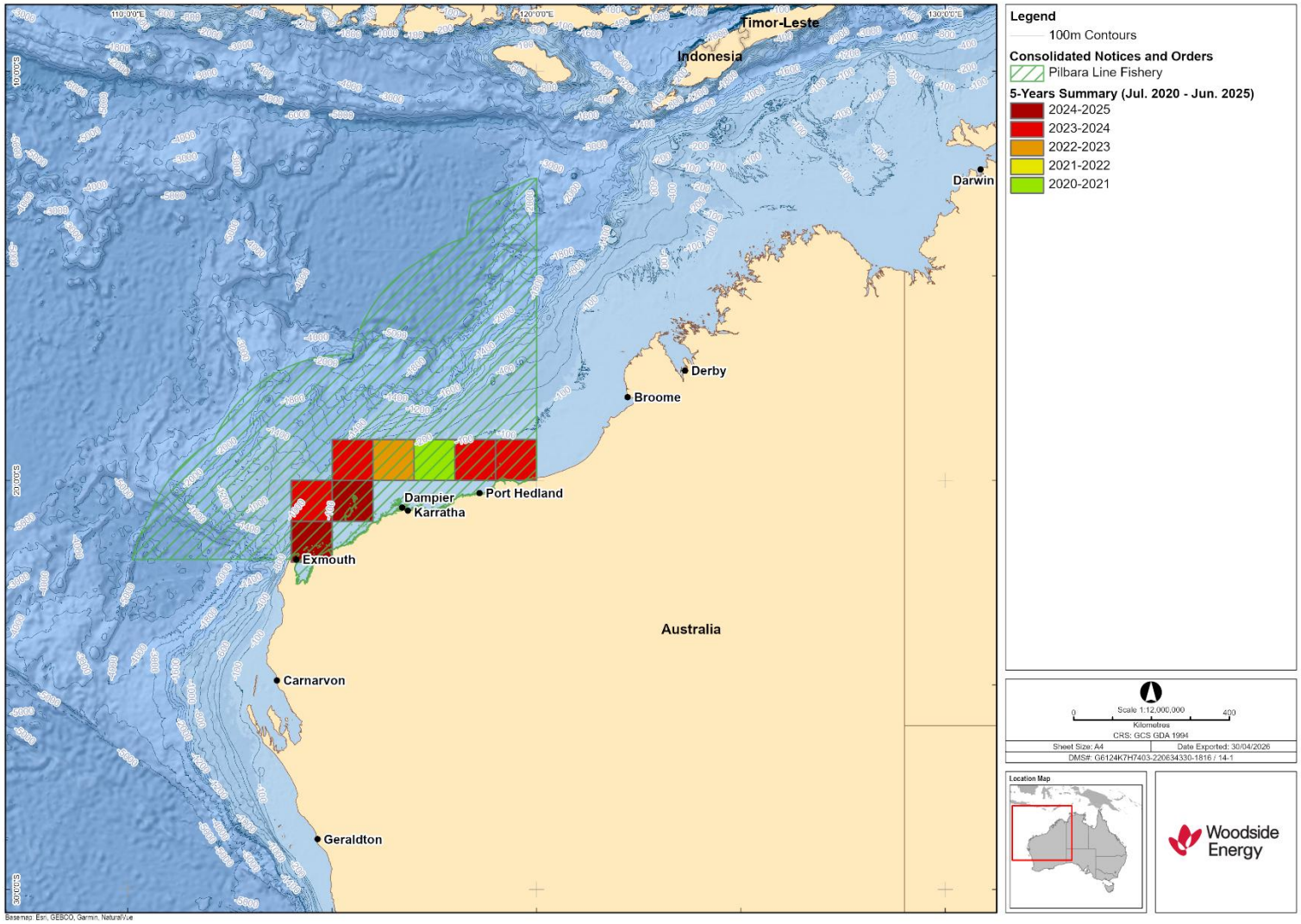


Figure 13-8: Pilbara Line Managed Fishery five-year average

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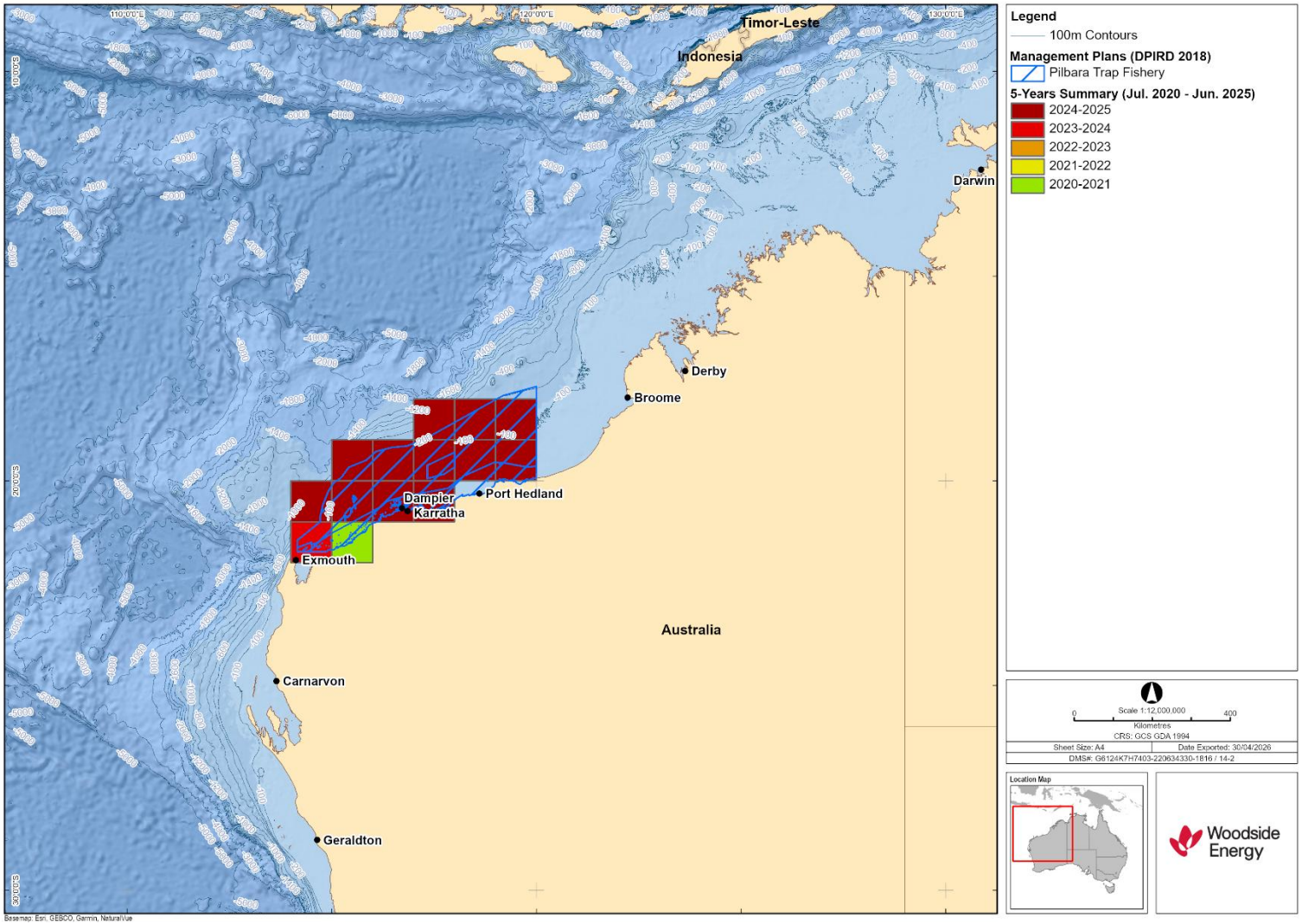


Figure 13-9: Pilbara Trap Managed Fishery five-year average

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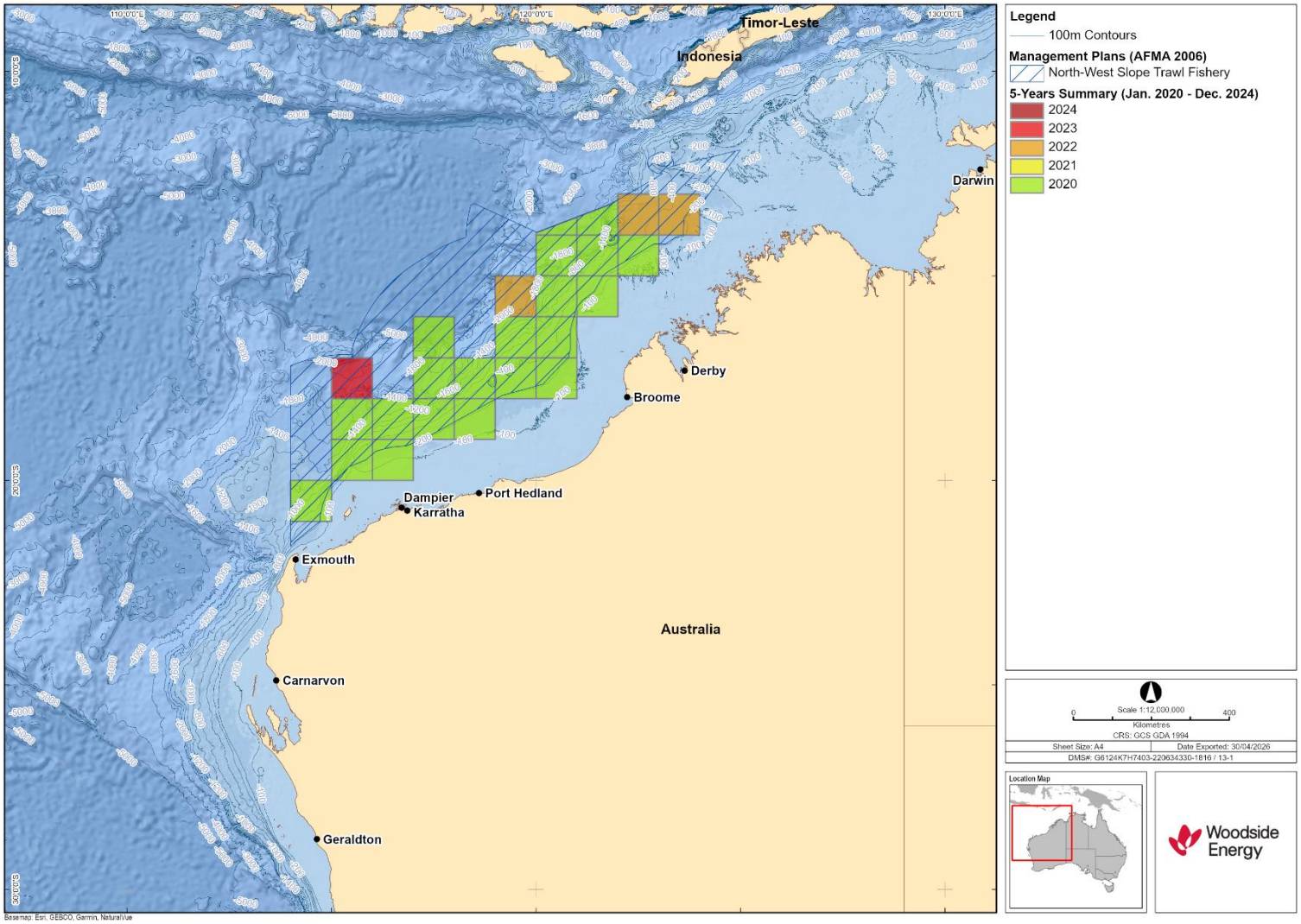


Figure 13-10: North West Slope Trawl Fishery five-year average

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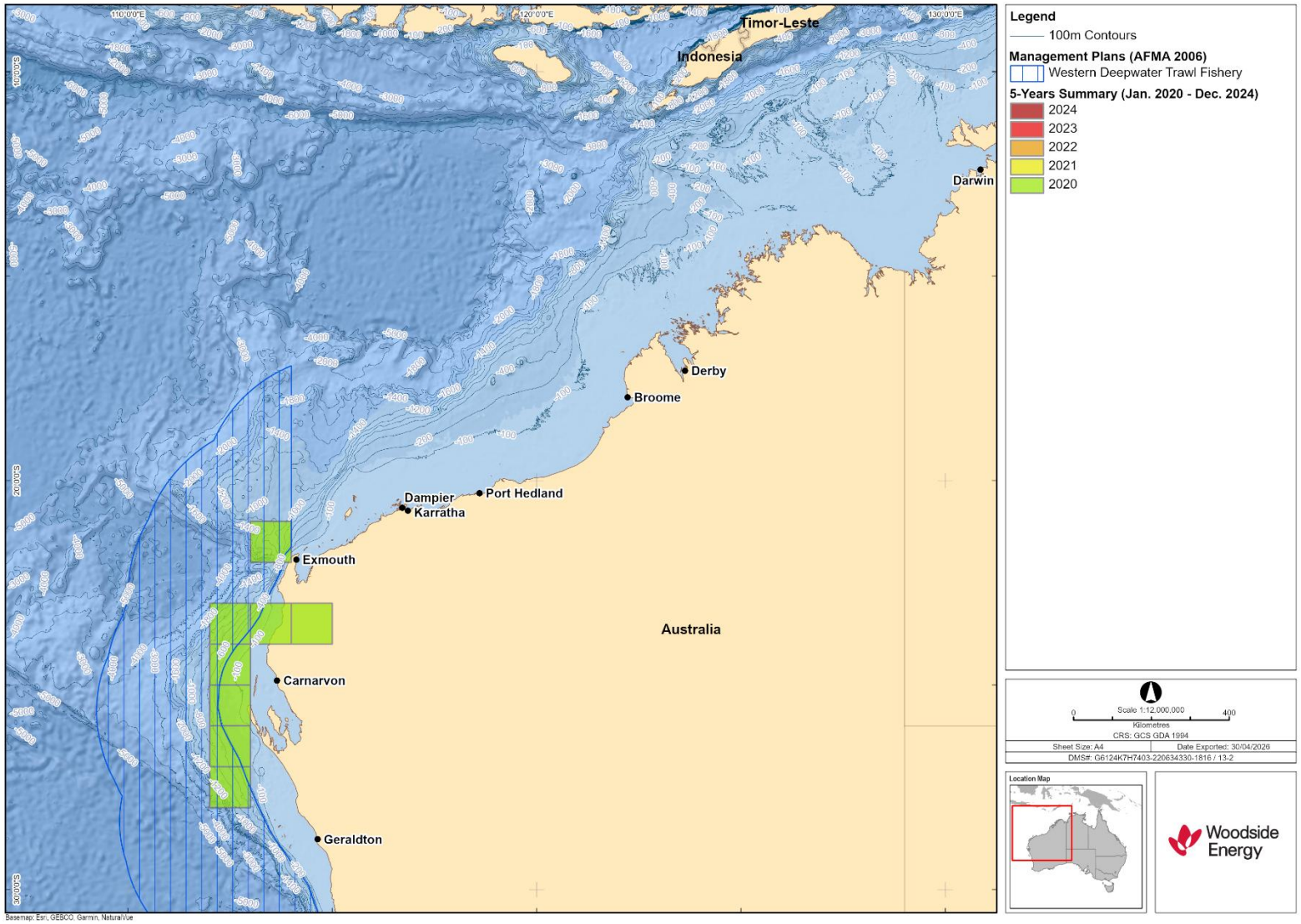


Figure 13-11: Western Deepwater Trawl Fishery five-year average

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13.2.2 Fish habitat protection areas

Fish habitat protection areas (FHPAs) are areas of special protection and management in WA waters. There are six FHPAs established in areas identified as having a particular value for protecting fish and their habitats, as well as providing areas for education or aquaculture, and which are considered to require a higher level of protection than other parts of the marine environment (DPIRD 2026a). They are set under section 115 of the *Fish Resources Management Act* (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* (WA) cannot exist in the same area (DPIRD 2026a).

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 inconsistent with the purpose of the FHPA; for example, if there is a risk of damage to fragile marine formations such as coral reefs. Protection may also involve managing human activities, such as dredging, draining wetlands, and fishing or diving near sensitive marine habitats (DPIRD 2026a).

FHPAs within the NWMR include:

- Miaboolya Beach
- Point Quobba.

FHPAs within the SWMR include:

- Cottesloe Reef
- Houtman Abrolhos Islands
- Kalbarri Blue Holes
- Lancelin Island Lagoon.

There are no FHPAs within the NMR.

13.2.2.1 Fish habitat protection areas within the NWMR

FHPAs within the NWMR are described here.

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. It also includes the adjoining mangrove system, associated seasonal creeks and salt marshes (DPIRD 2025c).

The Miaboolya system has regional importance as a fish nursery and general fish habitat. Native fauna include juvenile finfish species such as tailor (*Pomatomus saltatrix*), mulloway (*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 (DPIRD 2025c).

The Miaboolya area is of important cultural and historical value to the Gnulli native title group. The area is a place for collecting traditional food and gathering for social occasions (DPIRD 2025c).

Recreational fishing is permitted but there are restrictions in place by DPIRD (Alymore and Anderson 2003).

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 (DPIRD 2004).

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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 (DPIRD 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 of fish (DPIRD 2025d)

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 (DPIRD 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 (DPIRD 2025d).

13.2.3 Aquaculture

Aquaculture operations in the north-west are typically restricted to inland and shallow coastal waters. The aquaculture bioregions within the NWMR include the Gascoyne Coast bioregion, the North Coast bioregion and the West Coast bioregion. These fishing bioregion boundaries are defined by DPIRD as the government body responsible for managing primary industries in WA.

Aquaculture operations within the NWMR are described below.

13.2.3.1 Gascoyne Coast bioregion

The Gascoyne Coast recreational fishing bioregion runs from the Zuytdorp Cliffs north of Kalbarri to the Ashburton River south of Onslow (DPIRD 2026c).

In the Gascoyne Coast bioregion, aquaculture activities are focused on the blacklip oyster (*Pinctada margaritifera*). Other aquaculture developments in the Gascoyne Coast bioregion include emerging producers of coral and live rock species for aquariums. There is some recent interest in the development of rock oysters in the Exmouth Gulf (Newman *et al.* 2024a).

13.2.3.2 North Coast bioregion

The North Coast recreational fishing bioregion includes the Pilbara and Kimberley regions and runs from Ashburton River south of Onslow to the WA/NT border (DPIRD 2026c).

Aquaculture activities in the North Coast bioregion are dominated by the production of pearls (from the *Pinctada maxima* oyster). Many 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 (Newman *et al.* 2024a). Primary spawning of the pearl oyster occurs from mid-October to December. A smaller secondary spawning occurs in February and March (Newman *et al.* 2024a).

Finfish aquaculture in the Kimberley region is dominated by barramundi farming in the Kimberley Aquaculture Development Zone, which lies around 200 km north-east of Broome. Rock oyster trials are nearing completion near Karratha in the Pilbara region, but there is no commercial production of the species in this region at this stage (Newman *et al.* 2024a).

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 (Newman *et al.* 2024a).

13.2.3.3 West Coast Bioregion

The West Coast recreational fishing bioregion runs from Black Point east of Augusta to the Zuytdorp Cliffs north of Kalbarri. This area includes the Houtman Abrolhos Islands (DPIRD 2026c).

Aquaculture activities in the West Coast bioregion, defined by DPIRD are focused on finfish, edible oysters (mainly in Cockburn Sound) and marine algae for production of beta-carotene, used as a food additive and as a nutritional supplement.

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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 (Newman *et al.* 2024a).

13.3 Fisheries – traditional

Traditional or customary fisheries are typically restricted to shallow coastal waters and areas with structures such as reef. The Western Australia Recreational Fishing Guide (DPIRD 2025b) states that Indigenous 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.

Dugongs, fish and marine turtles that move between coastal and Commonwealth waters are important components of the Indigenous people's culture and diet. Indigenous people continue to actively manage their Sea Country in coastal waters of WA to protect and manage the marine environment, its resources and cultural values.

Indonesian fishers can fish within designated areas under the Australia–Indonesia regarding the Operations of Indonesian Traditional Fishermen in Areas of the Australian Fishing Zone and Continental Shelf – 1974 (MoU Box). Traditional fishing is allowed within the MoU Box (Figure 13-12), 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 after their designation as nature reserves under the Commonwealth *National Parks and Wildlife Conservation Act* 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 Box and Indonesian fishers use it seasonally 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 (Environmental Resources Management 2009). Browse Island is also frequently visited by shark fishers who mostly fish along the eastern margin of the MoU 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 2020).

Figure 13-12 shows the operations of Indonesian traditional fishers in the MoU Box in the NWMR.

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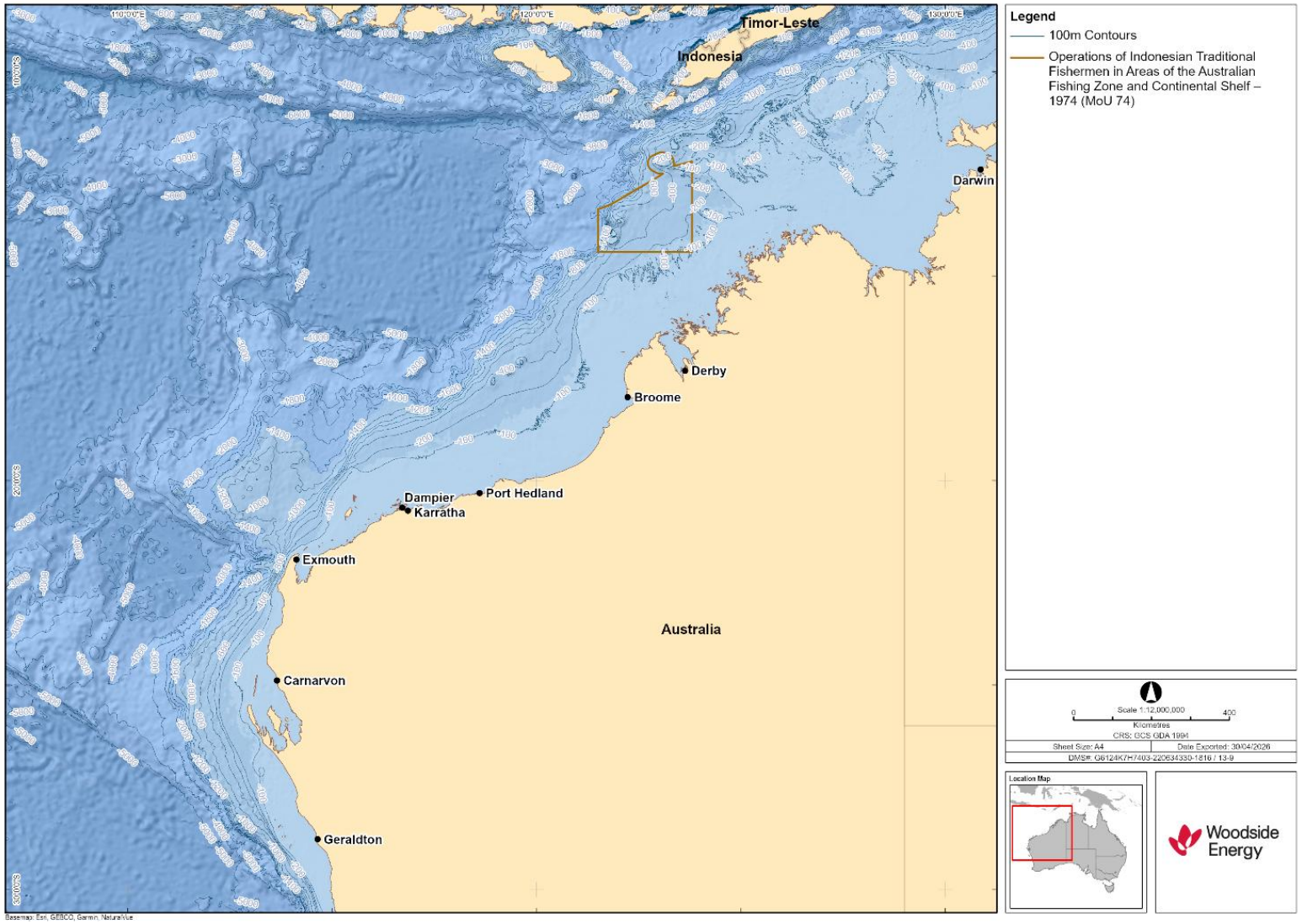


Figure 13-12: Memorandum of Understanding 74 Box – operations of Indonesian traditional fishermen in areas of the Australian Fishing Zone and Continental Shelf, 1974

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13.4 Tourism and recreation

WA's tourism sector is important to industry and the economy. In 2023–24, tourism accounted for 7.2% of WA's total jobs and generated a gross total value added of $138 billion (Tourism Western Australia 2025).

The Kimberley, Pilbara and Ningaloo-Leeuwin regions are popular 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 2024).

In 2025, visitation in the regions generated a spend of $758 million in Australia's Coral Coast and $1.4 million in the North West (Tourism Western Australia 2026).

13.4.1 Kimberley region

Tourism is one of the main industries in the Kimberley region, alongside resources, energy construction, aquaculture, agriculture and the services sector. The Kimberley Development Commission is focusing on maximising these sectors and the growing visitor economy by enhancing Aboriginal cultural experiences, adventure tourism, and eco and food tourism in the Kimberley region (Kimberley Development Commission 2025).

The Dampier Peninsula Activation Project progressed in the 2024–25 period, with upgrades to day-use facilities, communication systems and cultural heritage protection and signage, and upgrades to accommodation and resorts in the area to meet the needs of the community and tourism (Kimberley Development Commission 2025).

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 such as 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).

13.4.2 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 one million visitors to the region every year. There were over 590,000 Karijini National Park visitors recorded in the 2024–25 season (Pilbara Development Commission (PDC) 2025). 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 2024).In 2024, Mackerel Islands Pty received a grant in funding from the State Government to progress with the development of a tourism resort featuring eco-cabins, a restaurant and eco-tents on Thevenard Island. The initiative will also offer the 'Outback Ranges to Reef' tourism packages, combing visitation eco-tourism and exclusive accommodation on Thevenard and Direction islands, Onslow Beach Resort and Karijini Eco Retreat (PDC 2025).

Pilbara Dive Tours based in Karratha has grown significantly over the past 16 years, offering unique dive trips, snorkelling tours and certifications for divers in the Pilbara and Dampier Archpelago. The company also began collaborating with Flinders University in 2023 to train MAC Rangers to become dive certified, which will allow them to assist with submerged archaeological surveys on Murujuga Country (PDC 2025).

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).

13.4.3 Ningaloo-Leeuwin region

Tourism is a major economic driver across the connected Gascoyne, Ningaloo and Shark Bay regions. Tourism has the fourth largest economic output of all the major industries of the Gascoyne region (Gascoyne Development Commission (GDC) 2023). It contributes significantly to the local economy in terms of both

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income and employment. In the 2024–25 period, the Gascoyne region had more than 267,000 overnight visitors. The total visitor spend, including daytrips in the region, equated to $385 million, with tourism accounting for 21% of employment in the region (GDC 2025).

The main attraction of the coastline for tourists is the quality of marine life. The region supports extensive scuba diving, snorkelling and fishing; 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 of Exmouth Gulf, communities of Exmouth and Coral Bay, and adjacent proposed southern coastal reserves and pastoral leases – contributed an estimated $110 million in value to the WA economy (DBCA 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 (DBCA 2020). More than 90% of this value added is attributed to the domestic and international tourists who visit Ningaloo each year (DBCA 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 Tour 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 World Heritage Area (GDC 2022). The Aboriginal AstroTourism Project was launched where Indigenous people were consulted on night-sky constellations and trained in dark-sky tourism. Through this program, star gazing experiences were successfully delivered to about 665 visitors over ten nights during the Ningaloo Eclipse (GDC 2023).

Demersal-focused recreational fishing contributes to the Gascoyne region's marine-based tourism, with about 8,500 recreational licenced fishers recorded to participate in the Gascoyne Coast demersal fishery per year (Ryan *et al.* 2025). These fishers are typically regional residents and a broad mix of age groups. Participation levels in Gascoyne fisheries have shown sensitivity to external factors, such as COVID-19 travel restrictions, which caused a marked temporary decline in 2020 before rebounding again in 2021 (Ryan *et al.* 2025).

13.5 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 port authorities. These ports handle large tonnages of iron ore and petroleum exports in addition to salt, manganese, feldspar, chromite and copper (DEWHA 2008a).

Heavy vessel traffic exists within the Pilbara Ports Authority management area, which recorded 3,638 vessel visits in the Port of Dampier, 3,363 vessel movements in the Port of Port Hedland, 1,214 vessel movements in the Port of Ashburton, and 265 at the Port of Varanus Island in the 2024–25 reporting period (Pilbara Ports Authority 2025). 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, Australian Maritime Safety Authority established a network of shipping fairways off the north-west 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 liquified natural gas (LNG) ships, trading to the major ports into pre-defined routes to keep them clear of existing and planned offshore infrastructure (Australian Maritime Safety Authority 2013).

13.6 Petroleum basins

The NWMR supports multiple 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 (Geoscience Australia 2026). Of these, the Northern Carnarvon, Browse and Bonaparte basins hold large quantities and comprise most of Australia's reserves of natural gas (DEWHA 2008a), 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 fields within the NWMR.

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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.

Figure 13-13 shows the basins of WA and Woodside's hydrocarbon fields.

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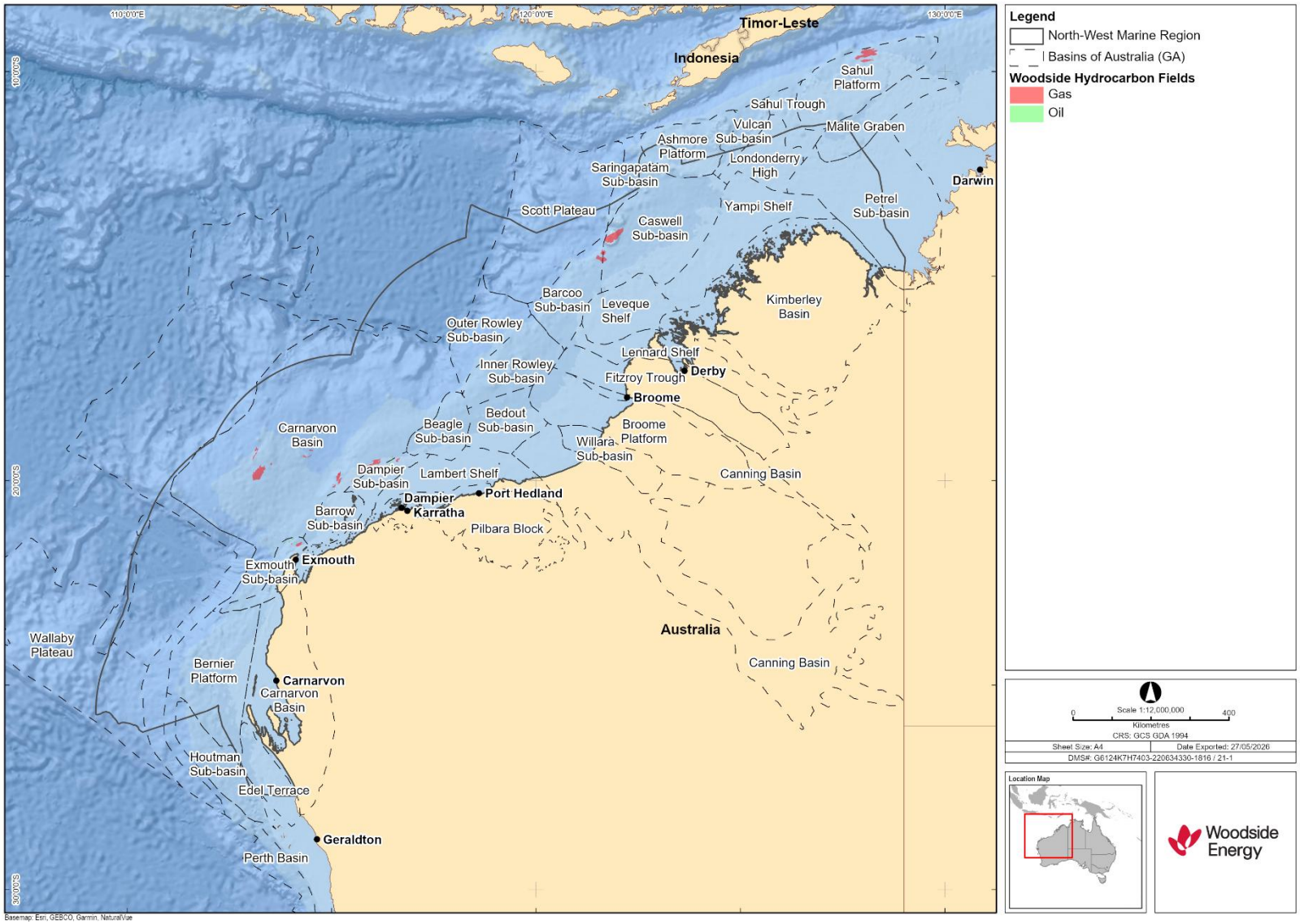


Figure 13-13: Petroleum basins within the NWMR

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13.7 Defence

Key Australian Department of Defence operational areas and facilities in the NWMR for training and operational activities include the following:

- 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 2008a).
- 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 in Karratha (Department of Defence 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 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 supports land, air and sea operations aimed at supporting Australia's northern approaches.
- The Naval Communications Station Harold E. Holt is about 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 2008a).
- Areas may be subject to unexploded ordnance because of military activities. These are offshore sites where ammunition and explosives have been dumped, or have been used as live bombing or firing ranges. Department of Defence maintains a record of sites confirmed as, or reasonably suspected of, being affected by unexploded ordnance. There are several suspected unexploded ordnance sites in the NWMR (Australian Government Defence n.d.).
- Three plutonium-based nuclear tests were completed at the Montebello Islands in 1952 and 1956. Sediments in the Montebello Islands Marine Park still show radionuclide levels up to 4,500 times higher than the wider WA coast, with the highest concentrations near the original blast sites. A recent study identified a radioactive site in the southern Lowendal Islands. Elevated plutonium and americium suggest potential remobilisation or transport of historic defence materials beyond known boundaries (Williams-Hoffman *et al.* 2025).

Figure 13-14 shows defence areas within the NWMR.

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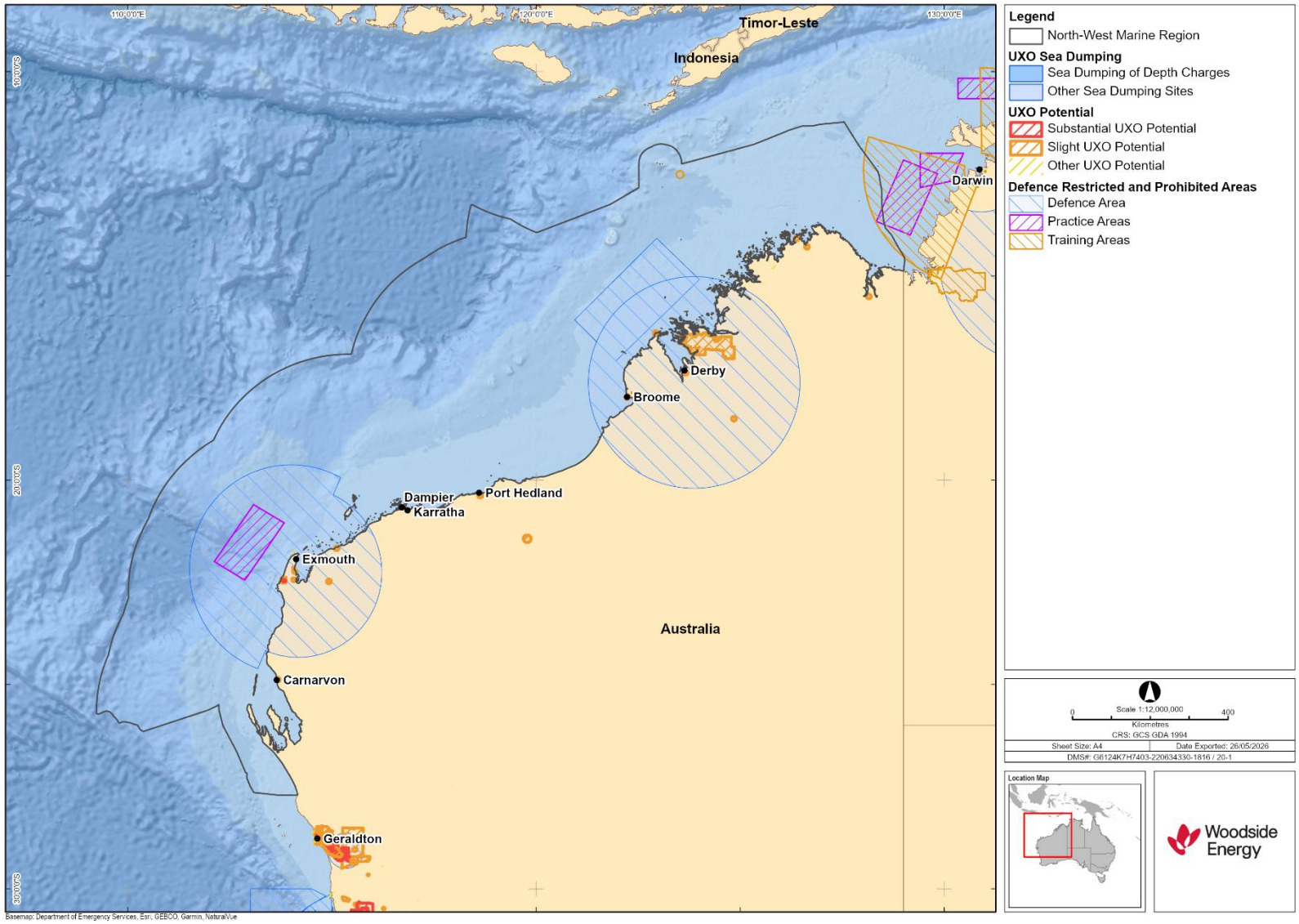


Figure 13-14: Defence areas within the NWMR

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15. LIST OF TERMS AND ACRONYMS

Table 15-1: List of terms and acronyms

Term	Definition
°C	Degrees Celsius
3D	three-dimensional
AFMA	Australian Fisheries Management Authority
AFZ	Australian Fishing Zone
AIMS	Australian Institute of Marine Science
AMP	Australian Marine Park
BC Act	*Biodiversity Conservation Act 2016* (WA)
BIA	biologically important area
BOM	Bureau of Meteorology
Burra Charter	Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance
CALM	Department of Conservation and Land Management
cm	centimetres
CSIRO	Commonwealth Scientific and Industrial Research Organisation
Commonwealth	Commonwealth
DAWE	Department of Agriculture, Water and the Environment
DBCA	Department of Biodiversity, Conservation and Attractions
DCCEEW	Department of Climate Change, Energy, the Environment and Wate
DEC	Department of Environment and Conservation
DEWHA	Department of Environment, Heritage, Water and the Arts
DEWR	Department of the Environment and Water Resources
DNP	Director of National Parks
DoE	Department of the Environment
DoEE	Department of Environment and Energy
DPAW	Department of the Parks and Wildlife
DPIRD	Department of Primary Industries and Regional Development
DPLH	Department of Planning, Lands and Heritage
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities
DWER	Department of Water and Environmental Regulation
EAAF	East Asian–Australasian Flyway
EEZ	Exclusive Economic Zone
EMBA	environment that may be affected
EP	Environment Plan
EPBC	environment protection and biodiversity conservation
F-CD	flatback turtle, Cape Domett stock
F-Pil	flatback turtle, Pilbara stock
F-swKim	flatback turtle, south-west Kimberley stock
FHPA	fish habitat protection area

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Term	Definition
G-AR	green turtle, Ashmore Reef stock
G-NWS	green turtle, NWS stock
G-ScBr	green turtle, Scott Reef-Browse Island stock
GDC	Gascoyne Development Commission
H-WA	hawksbill turtle, Western Australia genetic stock
ha	hectares
HMAS	His Majesty's Australian Ship
HSK	Handelstörkreuzer
ICOMOS	International Council on Monuments and Sites
ILUA	Indigenous Land Use Agreement
IPA	Indigenous Protected Area
IUCN	International Union for Conservation of Nature
IWC	International Whaling Commission
KBA	key biodiversity area
KEF	key ecological feature
kHz	kilohertz
km	kilometres
km/h	kilometres per hour
km²	cubic kilometres
KTLA	Karajarri Traditional Lands Association
L	litres
LH-WA	loggerhead turtle, Western Australia stock
LNG	liquified natural gas
m	metres
m²	square metres
m/s	metres per second
MAC	Murujuga Aboriginal Corporation
MCL	Murujuga Cultural Landscape
mm	millimetres
MNES	matters of national environmental significance
MODIS	moderate resolution imaging spectroradiometer
MoU	Memorandum of Understanding
MRAMP	Murujuga Rock Art Monitoring Program
MRAS	Murujuga Rock Art Strategy
NIAA	National Indigenous Australians Agency
nm	nautical miles
NMR	North Marine Region
NWMR	North-west Marine Region
NT	Northern Territory
NWS	North West Shelf

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Term	Definition
OPGGS (E) Regulations	Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023
PDC	Pilbara Development Commission
PMST	EPBC Act Protected Matters Search Tool
RNTBC	Registered Native Title Body Corporate
SA	South Australia
SPRAT	species profile and threats database
SWMR	South-west Marine Region
t	tonnes
TEC	threatened ecological community
UNESCO	United Nations Educational, Scientific and Cultural Organization
UWA	University of Western Australia
WA	Western Australia
WAMSI	Western Australian Marine Science Institution
WGAC	Wunambal Gaambera Aboriginal Corporation
Woodside	Woodside Energy Ltd. or Woodside Energy Group

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APPENDIX A PROTECTED MATTERS SEARCH REPORTS FOR THE 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.

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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.

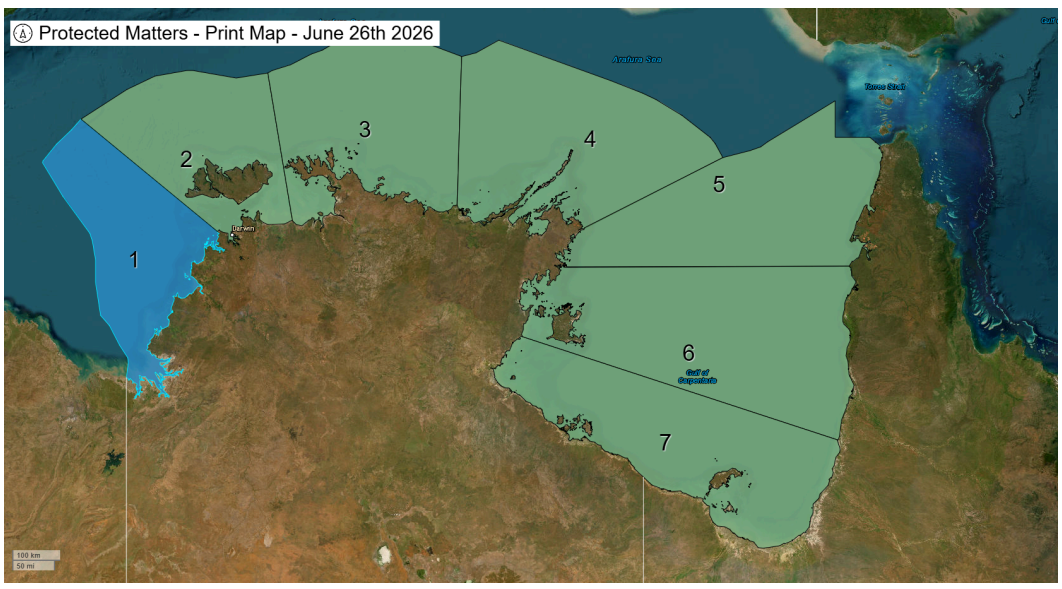


Figure 1: North Marine Region - Part 1

Report created: 26-Jun-2026

Summary
Details
Matters of NES
Other Matters Protected by the EPBC Act
Extra Information
Caveat
Acknowledgements

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	3
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	62
Listed Migratory Species:	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.

Commonwealth Lands:	5
Commonwealth Heritage Places:	1
Listed Marine Species:	104
Whales and Other Cetaceans:	16
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	5
Habitat Critical to the Survival of Marine Turtles:	2

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	1
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	51
Key Ecological Features (Marine):	4
Biologically Important Areas:	7
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Commonwealth Marine Area [Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Arenaria interpres		
Ruddy Turnstone [872]	Vulnerable	Species or species habitat likely to occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
Calidris canutus		
Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris tenuirostris		
Great Knot [862]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat likely to occur within area
Chloebia gouldiae listed as Erythrura gouldiae Gouldian Finch [90091]	Endangered	Species or species habitat likely to occur within area
Erythrotriorchis radiatus Red Goshawk [942]	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 Shrike-tit [26013]	Vulnerable	Species or species habitat likely to occur within area
Geophaps smithii smithii Partridge Pigeon (eastern) [64441]	Vulnerable	Species or species habitat likely to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat may occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
[Pezoporus occidentalis](#)		
Night Parrot [59350]	Critically Endangered	Species or species habitat may occur within area
[Phaethon rubricauda westralis](#)		
Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird [91824]	Endangered	Species or species habitat likely to occur within area
[Pluvialis squatarola](#)		
Grey Plover [865]	Vulnerable	Species or species habitat likely to occur within area
[Rostratula australis](#)		
Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
[Sternula albifrons](#)		
Little Tern [82849]	Vulnerable	Breeding 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
FROG		
[Uperoleia daviesae](#)		
Howard River Toadlet, Davies's Toadlet [85375]	Vulnerable	Species or species habitat may occur within area
MAMMAL		
[Antechinus bellus](#)		
Fawn Antechinus [344]	Vulnerable	Species or species habitat likely to occur within area
[Balaenoptera borealis](#)		
Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
[Balaenoptera musculus](#)		
Blue Whale [36]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Conilurus penicillatus Brush-tailed Rabbit-rat, Brush-tailed Tree-rat, Pakooma [132]	Vulnerable	Species or species habitat may occur within area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area
Mesembriomys gouldii gouldii Black-footed Tree-rat (Kimberley and mainland Northern Territory), Djintamoonga, Manbul [87618]	Endangered	Species or species habitat likely to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area
Petrogale concinna canescens Nabarlek (Top End) [87606]	Endangered	Species or species habitat likely to occur within area
Petrogale concinna concinna Nabarlek (Victoria River District) [87605]	Critically Endangered	Species or species habitat likely to occur within area
Phascogale pirata Northern Brush-tailed Phascogale [82954]	Vulnerable	Species or species habitat likely to occur within area
Saccolaimus saccolaimus nudicluniatus Bare-rumped Sheath-tailed Bat, Bare-rumped Sheathtail Bat [66889]	Vulnerable	Species or species habitat likely to occur within area
Sousa sahulensis Australian Humpback Dolphin [87942]	Vulnerable	Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
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 likely to occur within area
PLANT		
Typhonium praetermissum [65859]	Endangered	Species or species habitat likely to occur within area
Typhonium sp. Cox Peninsula (S.Nicholas 15/12/1999) [93623]	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
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Carettochelys insculpta Pig-nosed Turtle, Pitted Shell Turtle [1762]	Vulnerable	Species or species habitat may occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Breeding likely 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 [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		
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 likely to occur within area
Glyphis glyphis		
Speartooth Shark [82453]	Critically Endangered	Species or species habitat likely to occur within area
Pristis clavata		
Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding likely to occur within area
Pristis pristis		
Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat likely to occur within area
Pristis zijsron		
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sphyrna lewini		
Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
null		
Balaenoptera omurai		
Omura's Whale [87136]		Species or species habitat likely to occur within area
Migratory Marine Birds		
Anous stolidus		
Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Calonectris leucomelas		
Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Fregata ariel		
Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Fregata minor		
Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
Phaethon lepturus		
White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phaethon rubricauda		
Red-tailed Tropicbird [994]		Species or species habitat likely to occur within area
Sternula albifrons		
Little Tern [82849]	Vulnerable	Breeding likely to occur within area
Migratory Marine Species		
Anoxypristis cuspidata		
Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat 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
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharias taurus Grey Nurse Shark [64469]		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	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Dugong dugon Dugong [28]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat likely 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 likely to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding likely to occur within area
Pristis pristis Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Pristis zijsron		
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sousa sahulensis as Sousa chinensis		
Australian Humpback Dolphin [87942]	Vulnerable	Breeding likely 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 may occur within area
Hirundo rustica		
Barn Swallow [662]		Species or species habitat may occur within area
Motacilla cinerea		
Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava		
Yellow Wagtail [644]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
Acrocephalus orientalis		
Oriental Reed-Warbler [59570]		Species or species habitat may occur within area
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Species or species habitat likely to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
Calidris alba Sanderling [875]		Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Species or species habitat likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat likely to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Numenius phaeopus Whimbrel [849]		Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	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

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
Department of Climate Change, Energy, the Environment and Water	
Bradshaw Defence Area [CHL_105655]	NT
Department of Defence	
Bradshaw Field Training Area [DD_1495]	NT

Commonwealth Land Name	State
JORN Radar Site - Kalkarindji [DD_3210]	NT
JORN Radar Site - Nhulunbuy [DD_3211]	NT
NT Portion 03686 plan CP4953 [AGPR6603]	NT

Commonwealth Heritage Places [Resource Information]

Name	State	Status
Natural		
Bradshaw Defence Area	NT	Listed place

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
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 likely to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat likely 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]	Vulnerable	Species or species habitat likely to occur within area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
Calidris alba Sanderling [875]		Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Calidris tenuirostris Great Knot [862]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Cecropis daurica as Hirundo daurica Red-rumped Swallow [80610]		Species or species habitat may occur within area overfly marine area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat likely to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area overfly marine area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area overfly marine area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Numenius phaeopus Whimbrel [849]		Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Rostratula australis as Rostratula benghalensis (sensu lato)		
Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area overfly marine area
Sternula albifrons as Sterna albifrons		
Little Tern [82849]	Vulnerable	Breeding likely to occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area
Fish		
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		
Yellow-banded Pipefish [66200]		Species or species habitat may occur within area
Corythoichthys haematopterus		
Reef-top Pipefish [66201]		Species or species habitat may occur within area
Corythoichthys intestinalis		
Australian Messmate Pipefish, Banded Pipefish [66202]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Corythoichthys schultzi Schultz's Pipefish [66205]		Species or species habitat may occur within area
Cosmocampus banneri Roughridge Pipefish [66206]		Species or species habitat may occur within area
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 spinirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Haliichthys taeniophora as Haliichthys taeniophorus Ribboned Pipehorse, Ribboned Pipefish, Ribboned Seadragon [94706]		Species or species habitat may occur within area
Hippichthys cyanospilos Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area
Hippichthys parvicarinatus Short-keel Pipefish, Short-keeled Pipefish [66230]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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		
Dugong dugon Dugong [28]		Species or species habitat likely 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	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
[Crocodylus johnstoni](#) Freshwater Crocodile, Johnston's Crocodile, Johnstone's Crocodile [1773]		Species or species habitat may occur within area
[Crocodylus porosus](#) Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
[Emydocephalus annulatus](#) Eastern Turtle-headed Sea Snake [1125]		Species or species habitat may occur within area
[Eretmochelys imbricata](#) Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
[Hydrelaps darwiniensis](#) Port Darwin Sea Snake, Black-ringed Mangrove Sea Snake [1100]		Species or species habitat may occur within area
[Hydrophis atriceps](#) Black-headed Sea Snake, Banded Sea Snake [1101]		Species or species habitat may occur within area
[Hydrophis coggeri](#) Cogger's Sea Snake, Black-headed Sea Snake [25925]		Species or species habitat may occur within area
[Hydrophis elegans](#) Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area
[Hydrophis hardwickii as Lapemis hardwickii](#) Spine-bellied Sea Snake [93516]		Species or species habitat may occur within area
[Hydrophis inornatus](#) Plain Sea Snake [1107]		Species or species habitat may occur within area
[Hydrophis kingii as Disteira kingii](#) Spectacled Sea Snake [93511]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hydrophis macdowelli as Hydrophis mcdowelli		
MacDowell's Sea Snake, Small-headed Sea Snake, [75601]		Species or species habitat may occur within area
Hydrophis major as Disteira major		
Olive-headed Sea Snake [93512]		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 zweifeli as Enhydrina schistosa		
Australian Beaked Sea Snake [93514]		Species or species habitat may occur within area
Lepidochelys olivacea		
Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Breeding likely to occur within area
Parahydrophis mertoni		
Arafura Smooth Sea Snake, Northern Mangrove Sea Snake [1090]		Species or species habitat may occur within area

Whales and Other Cetaceans		[Resource Information]
Current Scientific Name	Status	Type of Presence
Mammal		

Current Scientific Name	Status	Type of Presence
Balaenoptera 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 omurai Omura's Whale [87136]		Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		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]	Vulnerable	Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area

Current Scientific Name	Status	Type of Presence
Sousa sahulensis Australian Humpback Dolphin [87942]	Vulnerable	Breeding likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		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 likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Australian Marine Parks	[Resource Information]
Park Name	Zone & IUCN Categories
Oceanic Shoals	Habitat Protection Zone (IUCN IV)
Joseph Bonaparte Gulf	Multiple Use Zone (IUCN VI)
Oceanic Shoals	Multiple Use Zone (IUCN VI)
Joseph Bonaparte Gulf	Special Purpose Zone (IUCN VI)
Oceanic Shoals	Special Purpose Zone (Trawl) (IUCN VI)

Habitat Critical to the Survival of Marine Turtles		[Resource Information]
Scientific Name	Behaviour	Presence
All year (Jun - Aug)		
Natator depressus Flatback Turtle [59257]	Nesting	Known to occur
May - Jul		
Lepidochelys olivacea Olive Ridley Turtle [1767]	Nesting	Known to occur

Extra Information

State and Territory Reserves		[Resource Information]
Protected Area Name	Reserve Type	State
North Kimberley	Marine Park	WA

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
Boskalis Cambridge Gulf Marine Sand Sourcing Project	2025/10106		Referral Decision
Construction of dam wall	2004/1365		Post-Approval
Darwin Pipeline Duplication (DPD) Project	2022/09372		Post-Approval
Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia West	2024/09826		Completed
Controlled action			
275 km gas pipeline from Wadeye to existing Darwin gas pipeline	2006/2930	Controlled Action	Post-Approval
Blacktip Project - Wharf Construction	2007/3293	Controlled Action	Completed
Bonaparte Liquified Natural Gas Project	2011/6141	Controlled Action	Post-Approval
Development of Blacktip Gas Field	2003/1180	Controlled Action	Post-Approval
Ichthys Gas Field, Offshore and onshore processing facilities and subsea pipeline	2008/4208	Controlled Action	Post-Approval
Port Patterson Barramundi Sea Cage Farm	2005/2149	Controlled Action	Completed
Project Sea Dragon stage 1 prawn aquaculture project, NT	2015/7527	Controlled Action	Post-Approval
Trans-territory Gas Pipeline	2003/1186	Controlled Action	Completed
Not controlled action			
2D seismic survey, exploration permit NT/P67	2004/1587	Not Controlled Action	Completed
2D Seismic Survey in Permit Areas WA-318-P & WA-319-P, near Cape Londonderry	2004/1687	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Aquaculture farm	2002/737	Not Controlled Action	Completed
Construction and operation of Radar Infrastructure	2004/1406	Not Controlled Action	Completed
Core Breeding and Broodstock Maturation Centre development, Point Ceylon, NT	2016/7713	Not Controlled Action	Completed
Cox Peninsular Remediation Project, NT	2015/7587	Not Controlled Action	Completed
Marine Survey for the Australia-ASEAN Power Link AAPL	2020/8714	Not Controlled Action	Completed
Nexus Drilling Program NT-P66	2007/3745	Not Controlled Action	Completed
Not controlled action (particular manner)			
2D and 3D Seismic Survey	2011/6197	Not Controlled Action (Particular Manner)	Post-Approval
2D and 3D Seismic Survey WA-405-P	2008/4133	Not Controlled Action (Particular Manner)	Post-Approval
2D and 3D Seismic Survey WA-405-P	2009/5104	Not Controlled Action (Particular Manner)	Post-Approval
2D Marine Seismic Survey	2009/4728	Not Controlled Action (Particular Manner)	Post-Approval
2D marine seismic survey of Braveheart,Kurrajong,Sunshine and Crocodile	2006/2917	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic survey	2009/5076	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic Survey in WA Permit Area TP/22 and Commonwealth Permit Area WA-280-P	2005/2100	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey	2009/4681	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
3D Seismic Survey (NT/P68)	2006/2980	Not Controlled Action (Particular Manner)	Post-Approval
Blacktip Gas Project Yelcherr Beach Wharf Construction	2007/3537	Not Controlled Action (Particular Manner)	Post-Approval
Bonaparte 2D & 3D marine seismic survey	2011/5962	Not Controlled Action (Particular Manner)	Post-Approval
Bonaparte Basin Seabed Mapping Survey	2009/4951	Not Controlled Action (Particular Manner)	Post-Approval
Bonaparte Seismic and Bathymetric Survey	2012/6295	Not Controlled Action (Particular Manner)	Post-Approval
Exploration Drilling in Permit Areas WA-402-P & WA-403-P	2010/5297	Not Controlled Action (Particular Manner)	Post-Approval
Joseph Bonaparte Gulf Seabed mapping survey	2010/5517	Not Controlled Action (Particular Manner)	Post-Approval
Kingtree & Ironstone-1 Exploration Wells	2011/5935	Not Controlled Action (Particular Manner)	Post-Approval
Malita West 3D Seismic Survey WA-402-P and WA-403-P	2007/3936	Not Controlled Action (Particular Manner)	Post-Approval
Marine Environmental Survey 2012	2012/6310	Not Controlled Action (Particular Manner)	Post-Approval
Nova 3D Seismic Survey	2013/6825	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
NT/P77 3D Marine Seismic Survey	2009/4683	Not Controlled Action (Particular Manner)	Post-Approval
NT/P80 2010 2D Marine Seismic Survey	2010/5487	Not Controlled Action (Particular Manner)	Post-Approval
Offshore Fibre Optic Cable Network Construction & Operation, Port Hedland WA to Darwin NT	2014/7223	Not Controlled Action (Particular Manner)	Post-Approval
Petrel MC2D Marine Seismic Survey	2010/5368	Not Controlled Action (Particular Manner)	Post-Approval
Removal of Potential Unexploded Ordnance within NAXA	2012/6503	Not Controlled Action (Particular Manner)	Post-Approval
Santos Petrel-7 Offshore Appraisal Drilling Programme (Bonaparte Basin)	2011/5934	Not Controlled Action (Particular Manner)	Post-Approval
Sonar and Acoustic Trials	2001/345	Not Controlled Action (Particular Manner)	Post-Approval
Sunshine Infill 2D and Mimosa 2D Marine Seismic Surveys	2009/4699	Not Controlled Action (Particular Manner)	Post-Approval
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
2D Marine Seismic Survey	2008/4623	Referral Decision	Completed
3D Seismic Survey (NT/P68)	2006/2949	Referral Decision	Completed
Nova 3D Seismic Survey, WA 442-NT/P81, Joseph Bonaparte Gulf	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
Carbonate bank and terrace system of the Sahul Shelf	North-west
Carbonate bank and terrace system of the Van Diemen Rise	North
Pinnacles of the Bonaparte Basin	North-west
Pinnacles of the Bonaparte Basin	North

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence
Dolphins		
Sousa sahulensis Australian Humpback Dolphin [87942]	Reproduction	Likely to occur
Marine Turtles		
Caretta caretta Loggerhead Turtle [1763]	Foraging	Known to occur
Chelonia mydas Green Turtle [1765]	Foraging	Known to occur
Lepidochelys olivacea Olive Ridley Turtle [1767]	Foraging	Known to occur
Lepidochelys olivacea Olive Ridley Turtle [1767]	Reproduction	Likely to occur
Natator depressus Flatback Turtle [59257]	Foraging	Known to occur
Natator depressus Flatback Turtle [59257]	Reproduction	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 is 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 on the contents of this report.

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 point locations and environmental data layers.

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 when time permits.

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 breeding sites; and
- 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.

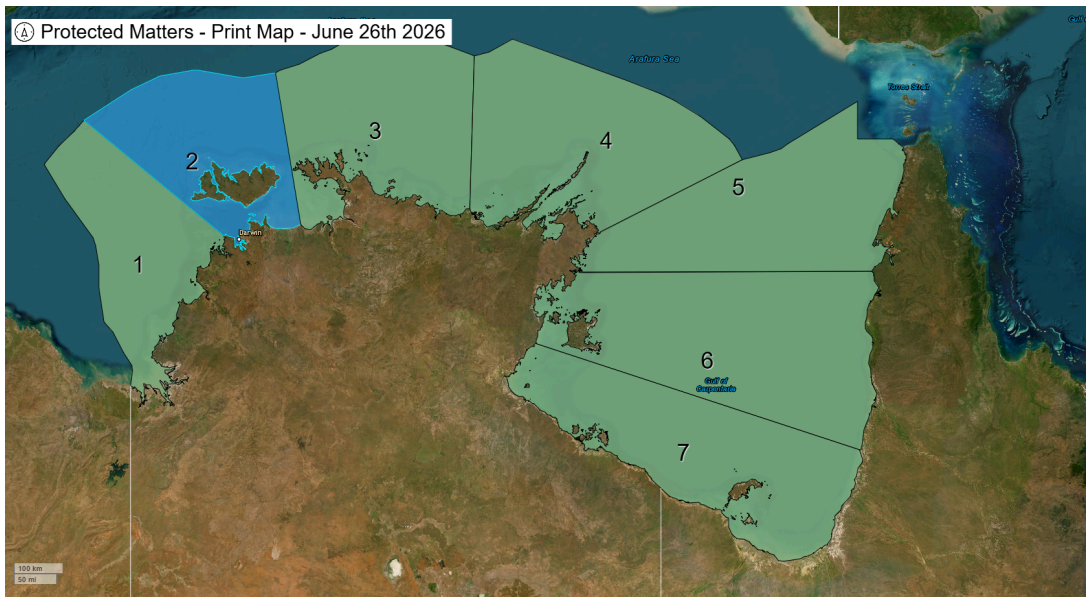


Figure 1: North Marine Region - Part 2

Report created: 26-Jun-2026

Summary
Details
Matters of NES
Other Matters Protected by the EPBC Act
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Acknowledgements

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	3
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	73
Listed Migratory Species:	79

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	30
Commonwealth Heritage Places:	7
Listed Marine Species:	119
Whales and Other Cetaceans:	26
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	4
Habitat Critical to the Survival of Marine Turtles:	3

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	5
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	75
Key Ecological Features (Marine):	3
Biologically Important Areas:	7
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands)	[Resource Information]
Ramsar Site Name	Proximity
Cobourg peninsula	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)

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 likely to occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
Calidris canutus		
Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris tenuirostris		
Great Knot [862]	Vulnerable	Roosting likely to occur within area

Scientific Name	Threatened Category	Presence Text
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting likely to occur within area
Chloebia gouldiae listed as Erythrura gouldiae Gouldian Finch [90091]	Endangered	Species or species habitat likely to occur within area
Epthianura crocea tunneyi Alligator Rivers Yellow Chat, Yellow Chat (Alligator Rivers) [67089]	Endangered	Species or species habitat likely to occur within area
Erythrotriorchis radiatus Red Goshawk [942]	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
Geophaps smithii smithii Partridge Pigeon (eastern) [64441]	Vulnerable	Species or species habitat likely to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat may occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting likely to occur within area
Melanodryas cucullata melvillensis Tiwi Islands Hooded Robin, Hooded Robin (Tiwi Islands) [67092]	Critically Endangered	Species or species habitat likely to occur within area
Mirafra javanica melvillensis Horsfield's Bushlark (Tiwi Islands) [81011]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Phaethon rubricauda westralis		
Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird [91824]	Endangered	Species or species habitat may occur within area
Pluvialis squatarola		
Grey Plover [865]	Vulnerable	Roosting likely to occur within area
Rostratula australis		
Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Sternula albifrons		
Little Tern [82849]	Vulnerable	Breeding 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
Tyto novaehollandiae melvillensis		
Tiwi Masked Owl, Tiwi Islands Masked Owl [26049]	Endangered	Species or species habitat likely to occur within area
Xenus cinereus		
Terek Sandpiper [59300]	Vulnerable	Roosting likely to occur within area
FROG		
Uperoleia daviesae		
Howard River Toadlet, Davies's Toadlet [85375]	Vulnerable	Species or species habitat likely to occur within area
MAMMAL		
Antechinus bellus		
Fawn Antechinus [344]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera 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
Conilurus penicillatus Brush-tailed Rabbit-rat, Brush-tailed Tree-rat, Pakooma [132]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area
Mesembriomys gouldii gouldii Black-footed Tree-rat (Kimberley and mainland Northern Territory), Djintamoonga, Manbul [87618]	Endangered	Species or species habitat likely to occur within area
Mesembriomys gouldii melvillensis Black-footed Tree-rat (Melville Island) [87619]	Vulnerable	Species or species habitat likely to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Breeding likely to occur within area
Petrogale concinna canescens Nabarlek (Top End) [87606]	Endangered	Species or species habitat likely to occur within area
Phascogale pirata Northern Brush-tailed Phascogale [82954]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
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 likely to occur within area
Sousa sahulensis Australian Humpback Dolphin [87942]	Vulnerable	Breeding likely to occur within area
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 likely to occur within area
PLANT		
Burmannia championii listed as Burmannia sp. Bathurst Island (R.Fensham 1021) [93461]	Endangered (listed as Burmannia sp. Bathurst Island	Species or species habitat likely to occur within area
Elaeocarpus miegei [65147]	Endangered	Species or species habitat likely to occur within area
Hoya australis subsp. oramicola a vine [55436]	Vulnerable	Species or species habitat likely to occur within area
Mitrella tiwiensis a vine [82029]	Vulnerable	Species or species habitat likely to occur within area
Stylidium ensatum a triggerplant [86366]	Endangered	Species or species habitat likely to occur within area
Tarennoidea wallichii [65173]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
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
Typhonium praetermissum [65859]	Endangered	Species or species habitat likely to occur within area
Typhonium sp. Cox Peninsula (S.Nicholas 15/12/1999) [93623]	Endangered	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
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Tiliqua scincoides intermedia Northern Blue-tongued Skink [89838]	Critically Endangered	Species or species habitat likely to occur within area
Varanus mertensi Mertens' 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		
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 likely to occur within area
Glyphis glyphis Speartooth Shark [82453]	Critically Endangered	Species or species habitat likely to occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding likely to occur within area
Pristis pristis Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat likely to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
null		

Scientific Name	Threatened Category	Presence Text
Balaenoptera omurai Omura's Whale [87136]		Species or species habitat likely to occur within area
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat may occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding likely to occur within area
Migratory Marine Species		
Anoxypristis cuspidata Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
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
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharias taurus Grey Nurse Shark [64469]		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	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Dugong dugon Dugong [28]		Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat likely 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 likely to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Breeding likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding likely to occur within area
Pristis pristis Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Pristis zijsron		
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sousa sahulensis as Sousa chinensis		
Australian Humpback Dolphin [87942]	Vulnerable	Breeding likely 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 likely to occur within area
Hirundo rustica		
Barn Swallow [662]		Species or species habitat likely to occur within area
Motacilla cinerea		
Grey Wagtail [642]		Species or species habitat likely to occur within area
Motacilla flava		
Yellow Wagtail [644]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
Acrocephalus orientalis		
Oriental Reed-Warbler [59570]		Species or species habitat may occur within area
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting likely to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
Calidris alba Sanderling [875]		Roosting likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area
Calidris falcinellus as Limicola falcinellus Broad-billed Sandpiper [91731]		Roosting likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting likely to occur within area
Calidris subminuta Long-toed Stint [861]		Roosting likely to occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting likely to occur within area
Charadrius dubius Little Ringed Plover [896]		Roosting likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting likely to occur within area

Scientific Name	Threatened Category	Presence Text
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Roosting likely to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Glareola maldivarum Oriental Pratincole [840]		Roosting likely to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Numenius phaeopus Whimbrel [849]		Roosting likely to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalasseus bergii Greater Crested Tern [83000]		Breeding likely to occur within area
Tringa brevipes Grey-tailed Tattler [851]		Roosting likely to occur within area
Tringa glareola Wood Sandpiper [829]		Roosting likely to occur within area
Tringa incana Wandering Tattler [831]		Roosting likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting likely to occur within area
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Roosting 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
Australian Broadcasting Corporation	
Lot 05808 Town of Darwin plan(s) LTO91/047 [AGPR919]	NT
Australian Communications and Media Authority (ACMA)	
Section 00032 Hundred of Bray plan OP 001510 [AGPR4619]	NT
Section 00033 Hundred of Bray plan A 000715 [AGPR947]	NT
Australian Postal Corporation	
Volume 196 Folio 136 [AGPR7373]	NT
Volume 703 Folio 129 [AGPR7046]	NT
Volume 738 Folio 234 [AGPR7032]	NT
Department of Climate Change, Energy, the Environment and Water	

Commonwealth Land Name	State
Larrakeyah Barracks Headquarters Building [CHL_105192]	NT
Larrakeyah Barracks Precinct [CHL_105251]	NT
Larrakeyah Barracks Sergeants Mess [CHL_105193]	NT
RAAF Base Commanding Officers Residence [CHL_105430]	NT
RAAF Base Precinct [CHL_105252]	NT
RAAF Base Tropical Housing Type 2 [CHL_105194]	NT
RAAF Base Tropical Housing Type 3 [CHL_105195]	NT
Department of Defence	
AAC 76 Army Cadet Unit - Tiwi Islands [DD_3053]	NT
DMFS Tybell Street - Winnellie [DD_3059]	NT
Larrakeyah Defence Precinct [DD_0836]	NT
Larrakeyah Defence Precinct [AGPR6484]	NT
Larrakeyah Defence Precinct [AGPR45]	NT
Lot 05231 Town of Darwin plan S 78/019 [AGPR5900]	NT
Patrol Boat SPO Office - Darwin [DD_3214]	NT
Portion 01609 Hundred of Bagot plan A 000525 [AGPR6569]	NT
Portion 02260 Hundred of Bagot plan S 79/149B [AGPR928]	NT
Portion 02270 Hundred of Bagot plan S 80/045 [AGPR4999]	NT
RAAF Bathurst Island Radar Site [DD_3085]	NT
RAAF Darwin [DD_1302]	NT
Section 05730 Hundred of Bagot plan L2004/063 [AGPR6570]	NT
Shoal Bay Receiving Station [DD_0107]	NT
Stokes Hill Oil Fuel Installation [DD_0108]	NT
Department of Home Affairs	
Unit 132 Lot 06379 Town of Darwin plan UP 94/062 [AGPR6152]	NT
Department of Infrastructure, Transport, Regional Development, Communications and the Arts	
Darwin Airport [AGPR5930]	NT

Commonwealth Heritage Places [Resource Information]

Name	State	Status

Name	State	Status
Historic		
Larrakeyah Barracks Headquarters Building	NT	Listed place
Larrakeyah Barracks Precinct	NT	Listed place
Larrakeyah Barracks Sergeants Mess	NT	Listed place
RAAF Base Commanding Officers Residence	NT	Listed place
RAAF Base Precinct	NT	Listed place
RAAF Base Tropical Housing Type 2	NT	Listed place
RAAF Base Tropical Housing Type 3	NT	Listed place

Listed Marine Species

[Resource Information]

Scientific Name	Threatened Category	Presence Text
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 likely to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat likely 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]	Vulnerable	Roosting likely to occur within area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
Calidris alba Sanderling [875]		Roosting likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Calidris falcinellus as Limicola falcinellus Broad-billed Sandpiper [91731]		Roosting likely to occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area overfly marine area
Calidris ruficollis Red-necked Stint [860]		Roosting likely to occur within area overfly marine area
Calidris subminuta Long-toed Stint [861]		Roosting likely to occur within area overfly marine area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting likely to occur within area overfly marine area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Cecropis daurica as Hirundo daurica Red-rumped Swallow [80610]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Chalcites osculans as Chrysococcyx osculans		
Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area
Charadrius dubius		
Little Ringed Plover [896]		Roosting likely to occur within area overfly marine area
Charadrius leschenaultii		
Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus		
Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting likely to occur within area
Charadrius ruficapillus		
Red-capped Plover [881]		Roosting likely to occur within area overfly marine area
Charadrius veredus		
Oriental Plover, Oriental Dotterel [882]		Roosting likely to occur within area overfly marine area
Fregata ariel		
Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Fregata minor		
Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
Gallinago megala		
Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area
Gallinago stenura		
Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area
Glareola maldivarum		
Oriental Pratincole [840]		Roosting likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Roosting likely to occur within area overfly marine area
Hirundo rustica Barn Swallow [662]		Species or species habitat likely to occur within area overfly marine area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting likely to occur within area overfly marine 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 likely to occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area overfly marine area
Numenius phaeopus Whimbrel [849]		Roosting likely to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat may occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting likely to occur within area overfly marine area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area overfly marine area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area overfly marine area
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Breeding likely to occur within area
Stiltia isabella Australian Pratincole [818]		Roosting likely to occur within area overfly marine area
Thalasseus bergii as Sterna bergii Greater Crested Tern [83000]		Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
[Tringa brevipes as Heteroscelus brevipes](#) Grey-tailed Tattler [851]		Roosting likely to occur within area
[Tringa glareola](#) Wood Sandpiper [829]		Roosting likely to occur within area overfly marine area
[Tringa incana as Heteroscelus incanus](#) Wandering Tattler [831]		Roosting likely to occur within area
[Tringa nebularia](#) Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area
[Tringa stagnatilis](#) Marsh Sandpiper, Little Greenshank [833]		Roosting likely to occur within area overfly marine area
[Xenus cinereus](#) Terek Sandpiper [59300]	Vulnerable	Roosting likely to occur within area overfly marine area
Fish		
[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

Scientific Name	Threatened Category	Presence Text
Corythoichthys flavofasciatus Yellow-banded 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 schultzi Schultz's Pipefish [66205]		Species or species habitat may occur within area
Cosmocampus banneri Roughridge Pipefish [66206]		Species or species habitat may occur within area
Doryrhamphus dactyliophorus Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area
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

Scientific Name	Threatened Category	Presence Text
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 spinirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophora as Haliichthys taeniophorus Ribboned Pipehorse, Ribboned Pipefish, Ribboned Seadragon [94706]		Species or species habitat may occur within area
Hippichthys cyanospilos Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area
Hippichthys parvicarinatus Short-keel Pipefish, Short-keeled Pipefish [66230]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Trachyrhamphus longirostris Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Mammal		
Dugong dugon Dugong [28]		Species or species habitat likely to occur within area
Reptile		
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

Scientific Name	Threatened Category	Presence Text
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Crocodylus johnstoni Freshwater Crocodile, Johnston's Crocodile, Johnstone's Crocodile [1773]		Species or species habitat may occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Hydrelaps darwiniensis Port Darwin Sea Snake, Black-ringed Mangrove Sea Snake [1100]		Species or species habitat may occur within area
Hydrophis atriceps Black-headed Sea Snake, Banded Sea Snake [1101]		Species or species habitat may occur within area
Hydrophis coggeri Cogger's Sea Snake, Black-headed Sea Snake [25925]		Species or species habitat may occur within area
Hydrophis elegans Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area
Hydrophis hardwickii as Lapemis hardwickii Spine-bellied Sea Snake [93516]		Species or species habitat may occur within area
Hydrophis inornatus Plain Sea Snake [1107]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hydrophis kingii as Disteira kingii Spectacled Sea Snake [93511]		Species or species habitat may occur within area
Hydrophis macdowelli as Hydrophis mcdowelli MacDowell's Sea Snake, Small-headed Sea Snake, [75601]		Species or species habitat may occur within area
Hydrophis major as Disteira major Olive-headed Sea Snake [93512]		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 zweifeli as Enhydrina schistosa Australian Beaked Sea Snake [93514]		Species or species habitat may occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding likely to occur within area
Parahydrophis mertoni Arafura Smooth Sea Snake, Northern Mangrove Sea Snake [1090]		Species or species habitat may occur within area

Whales and Other Cetaceans		[Resource Information]
Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera omurai Omura's Whale [87136]		Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
[Megaptera novaeangliae](#) Humpback Whale [38]		Species or species habitat likely to occur within area
[Orcaella heinsohni](#) Australian Snubfin Dolphin [81322]	Vulnerable	Breeding likely 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]	Vulnerable	Breeding likely to occur within area
[Stenella attenuata](#) Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
[Stenella coeruleoalba](#) Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
[Stenella longirostris](#) Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
[Steno bredanensis](#) Rough-toothed Dolphin [30]		Species or species habitat may occur within area
[Tursiops aduncus](#) Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area

Current Scientific Name	Status	Type of Presence
Tursiops aduncus (Arafura/Timor Sea populations)		
Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat likely to occur within area
Tursiops truncatus s. str.		
Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris		
Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks	[Resource Information]
Park Name	Zone & IUCN Categories
Oceanic Shoals	Habitat Protection Zone (IUCN IV)
Oceanic Shoals	Multiple Use Zone (IUCN VI)
Oceanic Shoals	National Park Zone (IUCN II)
Oceanic Shoals	Special Purpose Zone (Trawl) (IUCN VI)

Habitat Critical to the Survival of Marine Turtles		[Resource Information]
Scientific Name	Behaviour	Presence
All year (Jun - Aug)		
Natator depressus		
Flatback Turtle [59257]	Nesting	Known to occur
Dec - Jan		
Dermochelys coriacea		
Leatherback Turtle [1768]	Nesting	Known to occur
May - Jul		
Lepidochelys olivacea		
Olive Ridley Turtle [1767]	Nesting	Known to occur

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State
Casuarina	Coastal Reserve	NT
Charles Darwin	National Park	NT
Djukbinj	National Park	NT
Garig Gunak Barlu	Marine Park	NT
Mary River	National Park	NT

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Bayview, The Boulevarde, Darwin, NT	2015/7466		Completed
Berrimah Freight Terminal Expansion Project	2024/09847		Assessment
Clarence Strait Offshore Tidal Energy Project	2008/4660		Assessment
Darwin Pipeline Duplication (DPD) Project	2022/09372		Post-Approval
Darwin Pipeline Duplication DPD Project	2022/9166		Completed
Darwin Ship Lift Project	2021/9068		Post-Approval
East Arm Marine Industry Park, Darwin, NT	2014/7318		Completed
Establishment and operation of a refinery at Darwin, NT	2015/7604		Assessment
Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia West	2024/09826		Completed
Port Melville marine supply base, Melville Island	2015/7510		Completed
Proposed City of Weddell	2011/6090		Completed
Replacement of the East Point Outfall	2011/6099		Completed
Tiwi H2 Project	2022/09347		Assessment

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Andranangoo Creek & Lethbridge Bay mineral sand mining	2005/2155	Controlled Action	Completed
Augmentation of the East Point Effluent Rising Main and Extension of East Point Outfall	2009/5113	Controlled Action	Post-Approval
Barramundi Nursery Farm	2005/2378	Controlled Action	Completed
Condensate Processing Facility, East Arm	2006/2734	Controlled Action	Proposed Decision
Darwin to Moomba Gas Pipeline	2001/213	Controlled Action	Completed
East Arm Wharf Expansion Works	2010/5304	Controlled Action	Post-Approval
Glyde Point and Middle Arm Peninsula Infrastructure Support	2001/334	Controlled Action	Completed
Glyde Point Industrial Estate	2001/336	Controlled Action	Completed
Glyde Point Industrial Estate and Associated Infrastructure	2004/1506	Controlled Action	Completed
Hardwood Plantation	2001/229	Controlled Action	Post-Approval
Ichthys Gas Field, Offshore and onshore processing facilities and subsea pipeline	2008/4208	Controlled Action	Post-Approval
Kilimiraka Mineral Sands and Associated Infrastructure (Bathurst Island), NT	2012/6587	Controlled Action	Assessment Approach
Lee Point Master-planned urban development, Darwin, NT	2015/7591	Controlled Action	Post-Approval
Methanol Plant	2001/195	Controlled Action	Completed
Middle Arm Peninsula Industrial Area Development	2001/339	Controlled Action	Completed
Mt Peake iron, vanadium and titanium mining project & assoc infrastructure, 280kms NNW Alice Springs	2013/7027	Controlled Action	Post-Approval
Muirhead Subdivision	2010/5525	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Operation of 17 Tiger Helicopters at Robertson Barracks	2004/1459	Controlled Action	Post-Approval
Residential subdivision of Lot 9793 (formerly Lots 9774 and 9779) Lee Point Road	2005/2108	Controlled Action	Post-Approval
Shipping Channel Enhancement	2010/5431	Controlled Action	Completed
Snake Bay Barramundi Sea Cage Farm	2005/2150	Controlled Action	Completed
Talisman Saber 2005 Military Exercise	2004/1819	Controlled Action	Post-Approval
Tassie Shoal Gas Reforming and Methanol Production Plants - NT/P48	2000/108	Controlled Action	Post-Approval
Tassie Shoal LNG Project	2003/1067	Controlled Action	Post-Approval
Tropical Tidal Testing Centre, Clarence Strait, 50km NE Darwin	2014/7299	Controlled Action	Guidelines Issued
Not controlled action			
Andranangoo Mine Site Aircraft Landing Area	2007/3743	Not Controlled Action	Completed
Barossa-1 (NT/P69), Caldita-2 (NT/P61) exploration wells	2006/2793	Not Controlled Action	Completed
Caldita-1 Hydrocarbon Exploration Well, NT/P61	2004/1854	Not Controlled Action	Completed
Channel Island Bridge Pipeline Replacement Project	2020/8672	Not Controlled Action	Completed
Construction and operation of Radar Infrastructure	2004/1406	Not Controlled Action	Completed
Cox Peninsular Remediation Project, NT	2015/7587	Not Controlled Action	Completed
Crowley Government Services Inc Bulk Fuel Storage Facility	2021/9015	Not Controlled Action	Completed
Darwin Port Maintenance Dredging, Darwin Harbour, NT	2017/8122	Not Controlled Action	Completed
Darwin ship lift facility and marine industries project, Darwin Harbour NT	2018/8195	Not Controlled Action	Completed
Marine Survey for the Australia-ASEAN Power Link AAPL	2020/8714	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
NT/P68 2007 Two Well Drilling Program	2007/3569	Not Controlled Action	Completed
Project Sea Dragon Stage 1 Hatchery - Gunn Point, NT	2017/8092	Not Controlled Action	Completed
Residential Complex - Lots 6575 and 6576	2001/163	Not Controlled Action	Completed
Waterfront Redevelopment	2003/1256	Not Controlled Action	Completed
Wickham Point Interconnect Gas Pipeline	2008/4309	Not Controlled Action	Completed
Not controlled action (particular manner)			
2D Marine Seismic Survey	2009/4728	Not Controlled Action (Particular Manner)	Post-Approval
2D marine seismic survey of Braveheart,Kurrajong,Sunshine and Crocodile	2006/2917	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic survey	2009/5076	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic Survey - Petroleum Exploration Area NT/P68, Eastern Bonaparte Basin	2006/2922	Not Controlled Action (Particular Manner)	Post-Approval
3D Seismic Survey	2006/2729	Not Controlled Action (Particular Manner)	Post-Approval
3D Seismic Survey (NT/P68)	2006/2980	Not Controlled Action (Particular Manner)	Post-Approval
3D Seismic Survey (NT/P68)	2008/4121	Not Controlled Action (Particular Manner)	Post-Approval
Bonaparte 3D & 2D Seismic Survey, in NT/P82, Timor Sea	2012/6398	Not Controlled Action (Particular Manner)	Post-Approval
Bonaparte Basin Barossa Appraisal Drilling Campaign, NT	2012/6481	Not Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		(Particular Manner)	
Bonaparte Basin Seabed Mapping Survey	2009/4951	Not Controlled Action (Particular Manner)	Post-Approval
Caldita 3D Marine Seismic Survey - NT/P61, NT/P69, and acreage release area NT06-5	2006/3142	Not Controlled Action (Particular Manner)	Post-Approval
Dredging the outer shipping channels of Darwin Harbour	2013/6988	Not Controlled Action (Particular Manner)	Post-Approval
Eni Bathurst 3D Seismic Survey	2011/6118	Not Controlled Action (Particular Manner)	Post-Approval
Joseph Bonaparte Gulf Seabed mapping survey	2010/5517	Not Controlled Action (Particular Manner)	Post-Approval
Kingtree & Ironstone-1 Exploration Wells	2011/5935	Not Controlled Action (Particular Manner)	Post-Approval
Offshore Fibre Optic Cable Network Construction & Operation, Port Hedland WA to Darwin NT	2014/7223	Not Controlled Action (Particular Manner)	Post-Approval
Panda NT/P76 3D Seismic Acquisition Survey Program	2009/4992	Not Controlled Action (Particular Manner)	Post-Approval
Sunshine Infill 2D and Mimosa 2D Marine Seismic Surveys	2009/4699	Not Controlled Action (Particular Manner)	Post-Approval
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
2D Marine Seismic Survey	2008/4623	Referral Decision	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Referral decision			
3D Seismic Survey (NT/P68)	2006/2949	Referral Decision	Completed
Phillips Petroleum Wickham Point LNG facility	2001/391	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
Carbonate bank and terrace system of the Van Diemen Rise	North
Pinnacles of the Bonaparte Basin	North
Shelf break and slope of the Arafura Shelf	North

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence
Dolphins		
Orcaella heinsohni		
Australian Snubfin Dolphin [81322]	Reproduction	Known to occur
Sousa sahulensis		
Australian Humpback Dolphin [87942]	Reproduction	Likely to occur
Tursiops aduncus		
Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Reproduction	Known to occur
Marine Turtles		
Chelonia mydas		
Green Turtle [1765]	Reproduction	Likely to occur
Lepidochelys olivacea		
Olive Ridley Turtle [1767]	Reproduction	Likely to occur
Natator depressus		
Flatback Turtle [59257]	Reproduction	Known to occur
Seabirds		
Thalasseus bergii		
Crested Tern [83000]	Reproduction	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 is 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 on the contents of this report.

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 point locations and environmental data layers.

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 when time permits.

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 breeding sites; and
- 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: 26-Jun-2026

[Summary](#)

[Details](#)

- [Matters of NES](#)
- [Other Matters Protected by the EPBC Act](#)
- [Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

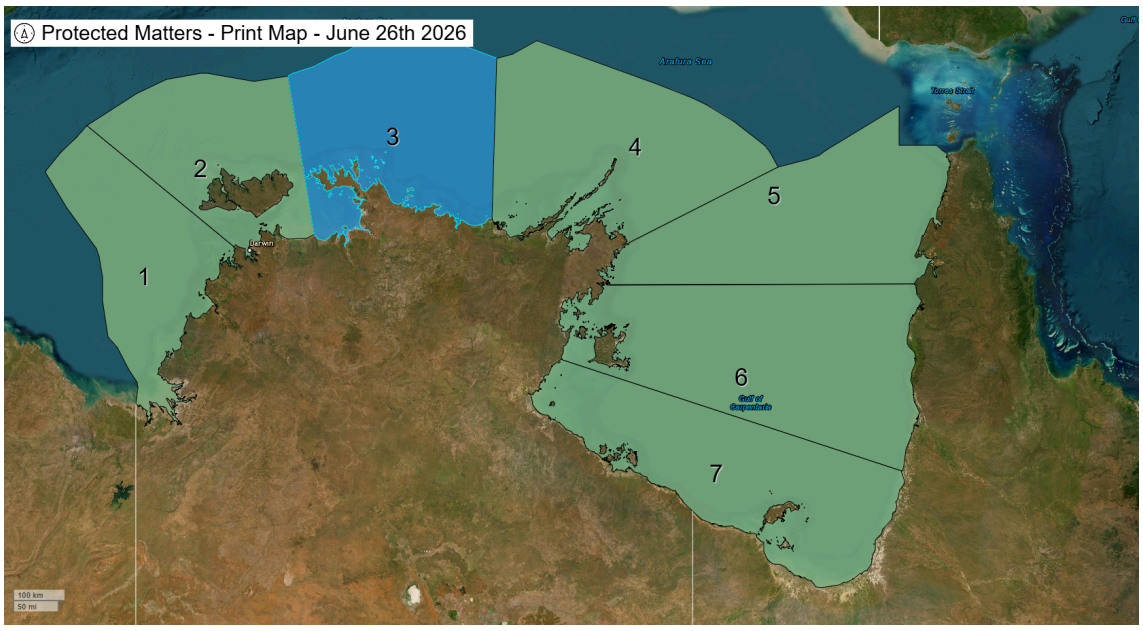


Figure 1: North Marine Region - Part 3

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	1
National Heritage Places:	1
Wetlands of International Importance (Ramsar	2
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	3
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	58
Listed Migratory Species:	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.

Commonwealth Lands:	4
Commonwealth Heritage Places:	None
Listed Marine Species:	103
Whales and Other Cetaceans:	26
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	1
Australian Marine Parks:	5
Habitat Critical to the Survival of Marine Turtles:	5

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	3
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	10
Key Ecological Features (Marine):	1
Biologically Important Areas:	12
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

World Heritage Properties [Resource Information]

Name	State	Legal Status
Kakadu National Park	NT	Declared property

National Heritage Places [Resource Information]

Name	State	Legal Status
Natural		
Kakadu National Park	NT	Listed place

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity
Cobourg peninsula	Within Ramsar site
Kakadu national park	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 Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Calidris acuminata		
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
Calidris canutus		
Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Species or species habitat likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Chloebia gouldiae listed as Erythrura gouldiae Gouldian Finch [90091]	Endangered	Species or species habitat likely to occur within area
Epthianura crocea tunneyi Alligator Rivers Yellow Chat, Yellow Chat (Alligator Rivers) [67089]	Endangered	Species or species habitat likely to occur within area
Erythrotriorchis radiatus Red Goshawk [942]	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 Shrike-tit [26013]	Vulnerable	Species or species habitat likely to occur within area
Geophaps smithii smithii Partridge Pigeon (eastern) [64441]	Vulnerable	Species or species habitat likely to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Limosa limosa Black-tailed Godwit [845]	Endangered	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Species or species habitat likely to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding 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
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Species or species habitat likely to occur within area
MAMMAL		
Antechinus bellus Fawn Antechinus [344]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Conilurus penicillatus Brush-tailed Rabbit-rat, Brush-tailed Tree-rat, Pakooma [132]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area
Mesembriomys gouldii gouldii Black-footed Tree-rat (Kimberley and mainland Northern Territory), Djintamoonga, Manbul [87618]	Endangered	Species or species habitat likely to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Breeding likely to occur within area
Petrogale concinna canescens Nabarlek (Top End) [87606]	Endangered	Species or species habitat likely to occur within area
Phascogale pirata Northern Brush-tailed Phascogale [82954]	Vulnerable	Species or species habitat likely to occur within area
Saccolaimus saccolaimus nudicluniatus Bare-rumped Sheath-tailed Bat, Bare-rumped Sheathtail Bat [66889]	Vulnerable	Species or species habitat likely to occur within area
Sousa sahulensis Australian Humpback Dolphin [87942]	Vulnerable	Breeding likely to occur within area
Trichosurus vulpecula arnhemensis Northern Brushtail Possum [83091]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Xeromys myoides Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat likely to occur within area
REPTILE		
Acanthophis hawkei Plains Death Adder [83821]	Vulnerable	Species or species habitat likely to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Carettochelys insculpta Pig-nosed Turtle, Pitted Shell Turtle [1762]	Vulnerable	Species or species habitat may occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Cryptoblepharus gurrmul Arafura Snake-eyed Skink [83106]	Endangered	Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area
Lucasium occultum Yellow-snouted Gecko, Yellow-snouted Ground Gecko [82993]	Endangered	Species or species habitat likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Nyctophilopython oenpelliensis		
Nawaran, Oenpelli Python, Oenpelli Rock Python [92941]	Vulnerable	Species or species habitat may 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 [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		
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 likely to occur within area
Glyphis glyphis		
Speartooth Shark [82453]	Critically Endangered	Species or species habitat likely to occur within area
Pristis clavata		
Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding likely to occur within area
Pristis pristis		
Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat likely to occur within area
Pristis zijsron		
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
[Sphyrna lewini](#) Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area

Listed Migratory Species

[Resource Information]

Scientific Name	Threatened Category	Presence Text
null		
[Balaenoptera omurai](#) Omura's Whale [87136]		Species or species habitat likely to occur within area
Migratory Marine Birds		
[Anous stolidus](#) Common Noddy [825]		Species or species habitat likely to occur within area
[Apus pacificus](#) Fork-tailed Swift [678]		Species or species habitat likely to occur within area
[Calonectris leucomelas](#) Streaked Shearwater [1077]		Species or species habitat likely to occur within area
[Fregata ariel](#) Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
[Fregata minor](#) Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
[Phaethon lepturus](#) White-tailed Tropicbird [1014]		Species or species habitat may occur within area
[Phaethon rubricauda](#) Red-tailed Tropicbird [994]		Species or species habitat may occur within area
[Sterna dougallii](#) Roseate Tern [817]		Breeding likely to occur within area
[Sternula albifrons](#) Little Tern [82849]	Vulnerable	Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Migratory Marine Species		
[Anoxypristis cuspidata](#) Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area
[Balaenoptera borealis](#) Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
[Balaenoptera edeni](#) Bryde's Whale [35]		Species or species habitat may occur within area
[Balaenoptera musculus](#) Blue Whale [36]	Endangered	Species or species habitat may occur within area
[Balaenoptera physalus](#) Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
[Carcharhinus longimanus](#) Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
[Carcharias taurus](#) Grey Nurse Shark [64469]		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 likely to occur within area
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
[Crocodylus porosus](#) Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Dugong dugon Dugong [28]		Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat may occur within area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat likely 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 likely to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Breeding likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Pristis clavata		
Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding likely to occur within area
Pristis pristis		
Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat likely to occur within area
Pristis zijsron		
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sousa sahulensis as Sousa chinensis		
Australian Humpback Dolphin [87942]	Vulnerable	Breeding likely 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 likely to occur within area
Hirundo rustica		
Barn Swallow [662]		Species or species habitat likely to occur within area
Motacilla flava		
Yellow Wagtail [644]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
Acrocephalus orientalis		
Oriental Reed-Warbler [59570]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Species or species habitat likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Limosa limosa Black-tailed Godwit [845]	Endangered	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Numenius phaeopus Whimbrel [849]		Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Species or species habitat likely to occur within area
Thalasseus bergii Greater Crested Tern [83000]		Breeding likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Species or species habitat likely to occur within area
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	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
Australian Maritime Safety Authority	
NT Portion 02380 plan(s) S 80/179B [AGPR37]	NT

Commonwealth Land Name	State
NT Portion 02381 plan(s) S 80/179B [AGPR38]	NT
Department of Climate Change, Energy, the Environment and Water	
Kakadu National Park (Commonwealth) [CAPAD_CWTH_06]	NT
Services Australia	
Lot 00693 Townsite of Maningrida S 891113 [AGPR6612]	NT

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
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 likely to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat likely 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
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	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Calidris tenuirostris Great Knot [862]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Cecropis daurica as Hirundo daurica Red-rumped Swallow [80610]		Species or species habitat may occur within area overfly marine area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area overfly marine area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hirundo rustica Barn Swallow [662]		Species or species habitat likely to occur within area overfly marine area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area overfly marine area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Species or species habitat likely to occur within area overfly marine area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Numenius phaeopus Whimbrel [849]		Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat may occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area overfly marine area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area overfly marine area
Sterna dougallii Roseate Tern [817]		Breeding likely to occur within area
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Breeding likely to occur within area
Thalasseus bergii as Sterna bergii Greater Crested Tern [83000]		Breeding likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Species or species habitat likely to occur within area overfly marine area
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Fish		
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 Yellow-banded 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 schultzi Schultz's Pipefish [66205]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Cosmocampus banneri Roughridge Pipefish [66206]		Species or species habitat may occur within area
Doryrhamphus dactyliophorus Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area
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 spinirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophora as Haliichthys taeniophorus Ribboned Pipehorse, Ribboned Pipefish, Ribboned Seadragon [94706]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hippichthys cyanospilos Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area
Hippichthys parvicarinatus Short-keel Pipefish, Short-keeled Pipefish [66230]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
[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		
[Dugong dugon](#) Dugong [28]		Species or species habitat likely to occur within area
Reptile		
[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 likely to occur within area
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Breeding likely 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

Scientific Name	Threatened Category	Presence Text
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Hydrelaps darwiniensis Port Darwin Sea Snake, Black-ringed Mangrove Sea Snake [1100]		Species or species habitat may occur within area
Hydrophis atriceps Black-headed Sea Snake, Banded Sea Snake [1101]		Species or species habitat may occur within area
Hydrophis coggeri Cogger's Sea Snake, Black-headed Sea Snake [25925]		Species or species habitat may occur within area
Hydrophis czeblukovi Fine-spined Sea Snake [59233]		Species or species habitat may occur within area
Hydrophis elegans Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area
Hydrophis hardwickii as Lapemis hardwickii Spine-bellied Sea Snake [93516]		Species or species habitat may occur within area
Hydrophis inornatus Plain Sea Snake [1107]		Species or species habitat may occur within area
Hydrophis kingii as Disteira kingii Spectacled Sea Snake [93511]		Species or species habitat may occur within area
Hydrophis macdowelli as Hydrophis mcdowelli MacDowell's Sea Snake, Small-headed Sea Snake, [75601]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hydrophis major as Disteira major Olive-headed Sea Snake [93512]		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 zweifeli as Enhydrina schistosa Australian Beaked Sea Snake [93514]		Species or species habitat may occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding likely to occur within area
Parahydrophis mertoni Arafura Smooth Sea Snake, Northern Mangrove Sea Snake [1090]		Species or species habitat may occur within area

Whales and Other Cetaceans		[Resource Information]
Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area

Current Scientific Name	Status	Type of Presence
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Balaenoptera omurai Omura's Whale [87136]		Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Breeding likely 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]	Vulnerable	Breeding likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops aduncus 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 likely to occur within area

Current Scientific Name	Status	Type of Presence
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Commonwealth Reserves Terrestrial [Resource Information]

Name	State	Type
Kakadu	NT	National Park (Commonwealth)

Australian Marine Parks [Resource Information]

Park Name	Zone & IUCN Categories
Arafura	Multiple Use Zone (IUCN VI)
Oceanic Shoals	Multiple Use Zone (IUCN VI)
Arafura	Special Purpose Zone (IUCN VI)
Arnhem	Special Purpose Zone (IUCN VI)
Arafura	Special Purpose Zone (Trawl) (IUCN VI)

Habitat Critical to the Survival of Marine Turtles [Resource Information]

Scientific Name	Behaviour	Presence
All year (Jun - Aug)		
Natator depressus Flatback Turtle [59257]	Nesting	Known to occur
Dec - Jan		
Dermochelys coriacea Leatherback Turtle [1768]	Nesting	Known to occur
May - Jul		
Lepidochelys olivacea Olive Ridley Turtle [1767]	Nesting	Known to occur
Oct - Feb		
Eretmochelys imbricata Hawksbill Turtle [1766]	Nesting	Known to occur
Oct - Mar		

Scientific Name	Behaviour	Presence
Chelonia mydas		
Green Turtle [1765]	Nesting	Known to occur

Extra Information

State and Territory Reserves		[Resource Information]
Protected Area Name	Reserve Type	State
Garig Gunak Barlu	National Park	NT
Garig Gunak Barlu	Marine Park	NT
Mary River	National Park	NT

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Geo-scientific survey	2005/2004	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
Not controlled action (particular manner)			
2D Marine Seismic Survey	2009/4728	Not Controlled Action (Particular Manner)	Post-Approval
2D marine seismic survey of Braveheart,Kurrajong,Sunshine and Crocodile	2006/2917	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic survey	2009/5076	Not Controlled Action (Particular Manner)	Post-Approval
Kingtree & Ironstone-1 Exploration Wells	2011/5935	Not Controlled Action (Particular Manner)	Post-Approval
NT/P74 & NT/P75 - 2D marine seismic survey	2008/4316	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
2D Marine Seismic Survey	2008/4623	Referral Decision	Completed
Installation of Telecommunication Facilities	2001/254	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
Tributary Canyons of the Arafura Depression	North

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence
Dolphins		
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Reproduction	Known to occur
Sousa sahulensis Australian Humpback Dolphin [87942]	Reproduction	Likely to occur
Tursiops aduncus Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Reproduction	Known to occur
Marine Turtles		
Chelonia mydas Green Turtle [1765]	Foraging	Known to occur
Chelonia mydas Green Turtle [1765]	Reproduction	Likely to occur
Dermochelys coriacea Leatherback Turtle [1768]	Reproduction	Likely to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Reproduction	Known to occur

Scientific Name	Behaviour	Presence
Lepidochelys olivacea Olive Ridley Turtle [1767]	Reproduction	Likely to occur
Natator depressus Flatback Turtle [59257]	Reproduction	Known to occur
Seabirds		
Onychoprion anaethetus Bridled Tern [82845]	Reproduction	Known to occur
Sterna dougallii Roseate Tern [817]	Reproduction	Known to occur
Thalasseus bergii Crested Tern [83000]	Reproduction	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 is 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 on the contents of this report.

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 point locations and environmental data layers.

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 when time permits.

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 breeding sites; and
- 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: 26-Jun-2026

[Summary](#)
[Details](#)
- [Matters of NES](#)
- [Other Matters Protected by the EPBC Act](#)
- [Extra Information](#)

[Caveat](#)
[Acknowledgements](#)

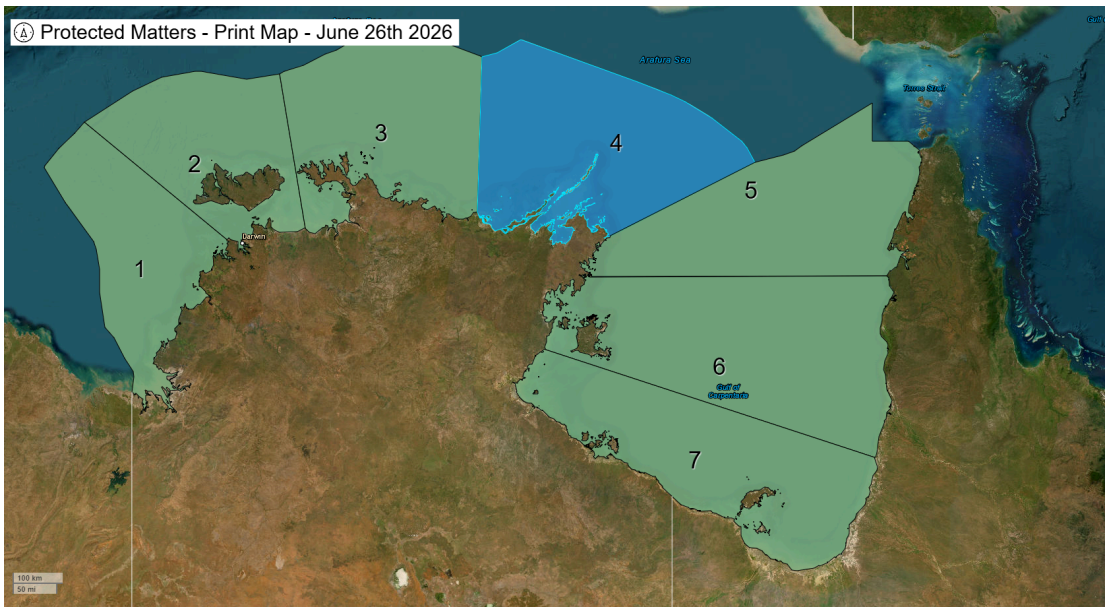


Figure 1: North Marine Region - Part 4

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.

World Heritage Properties:	None
National Heritage Places:	1
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	52
Listed Migratory Species:	61

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	22
Commonwealth Heritage Places:	None
Listed Marine Species:	92
Whales and Other Cetaceans:	26
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	3
Habitat Critical to the Survival of Marine Turtles:	5

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	17
Key Ecological Features (Marine):	2
Biologically Important Areas:	9
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

National Heritage Places [Resource Information]

Name	State	Legal Status
Indigenous		
Wurrwurrwuy	NT	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		
Calidris acuminata		
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
Calidris canutus		
Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris tenuirostris		
Great Knot [862]	Vulnerable	Species or species habitat likely to occur within area
Charadrius leschenaultii		
Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Chloebia gouldiae listed as Erythrura gouldiae		
Gouldian Finch [90091]	Endangered	Species or species habitat may occur within area
Erythrotriorchis radiatus		
Red Goshawk [942]	Endangered	Species or species habitat likely 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 smithii		
Partridge Pigeon (eastern) [64441]	Vulnerable	Species or species habitat likely to occur within area
Limnodromus semipalmatus		
Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica baueri		
Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat may occur within area
Limosa limosa		
Black-tailed Godwit [845]	Endangered	Species or species habitat likely to occur within area
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Rostratula australis		
Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Sternula albifrons		
Little Tern [82849]	Vulnerable	Breeding likely to occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Tyto novaehollandiae kimberli		
Masked Owl (northern) [26048]	Vulnerable	Species or species habitat likely to occur within area
MAMMAL		
Antechinus bellus		
Fawn Antechinus [344]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Species or species habitat may occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Conilurus penicillatus		
Brush-tailed Rabbit-rat, Brush-tailed Tree-rat, Pakooma [132]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus hallucatus		
Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Translocated population known to occur within area
Isoodon auratus auratus		
Golden Bandicoot (mainland) [66665]	Vulnerable	Translocated population known to occur within area
Macroderma gigas		
Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area
Mesembriomys gouldii gouldii		
Black-footed Tree-rat (Kimberley and mainland Northern Territory), Djintamoonga, Manbul [87618]	Endangered	Species or species habitat likely to occur within area
Notomys aquilo		
Northern Hopping-mouse, Woorrentinta [123]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Orcaella heinsohni		
Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area
Petrogale concinna canescens		
Nabarlek (Top End) [87606]	Endangered	Species or species habitat likely to occur within area
Phascogale pirata		
Northern Brush-tailed Phascogale [82954]	Vulnerable	Species or species habitat may occur within area
Saccolaimus saccolaimus nudicluniatus		
Bare-rumped Sheath-tailed Bat, Bare-rumped Sheathtail Bat [66889]	Vulnerable	Species or species habitat likely to occur within area
Sousa sahulensis		
Australian Humpback Dolphin [87942]	Vulnerable	Species or species habitat likely to occur within area
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 likely to occur within area
PLANT		
Erythroxylum sp. Cholmondely Creek (J.R.Clarkson 9367) (Northern Territory Population)		
[91740]	Vulnerable	Species or species habitat likely to occur within area
REPTILE		
Acanthophis hawkei		
Plains Death Adder [83821]	Vulnerable	Species or species habitat may occur within area
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding likely 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 [1568]	Endangered	Species or species habitat likely to occur within area
Varanus mitchelli Mitchell's Water Monitor [1569]	Critically Endangered	Species or species habitat may occur within area
SHARK		
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Glyphis glyphis Speartooth Shark [82453]	Critically Endangered	Species or species habitat likely to occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding likely to occur within area
Pristis pristis Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat may occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
[Rhincodon typus](#) Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
[Sphyrna lewini](#) Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
null		
[Balaenoptera omurai](#) Omura's Whale [87136]		Species or species habitat likely to occur within area
Migratory Marine Birds		
[Anous stolidus](#) Common Noddy [825]		Breeding likely to occur within area
[Apus pacificus](#) Fork-tailed Swift [678]		Species or species habitat likely to occur within area
[Calonectris leucomelas](#) Streaked Shearwater [1077]		Species or species habitat likely to occur within area
[Fregata ariel](#) Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
[Fregata minor](#) Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
[Onychoprion anaethetus](#) Bridled Tern [82845]		Breeding likely to occur within area
[Phaethon lepturus](#) White-tailed Tropicbird [1014]		Species or species habitat may occur within area
[Phaethon rubricauda](#) Red-tailed Tropicbird [994]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Sterna dougallii		
Roseate Tern [817]		Breeding likely to occur within area
Sterna sumatrana		
Black-naped Tern [800]		Breeding likely to occur within area
Sternula albifrons		
Little Tern [82849]	Vulnerable	Breeding likely to occur within area
Migratory Marine Species		
Anoxypristis cuspidata		
Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni		
Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Species or species habitat may occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Carcharhinus longimanus		
Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharias taurus		
Grey Nurse Shark [64469]		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	Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Dugong dugon Dugong [28]		Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat may occur within area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat likely 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 likely to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
[Orcinus orca](#) Killer Whale, Orca [46]		Species or species habitat may occur within area
[Physeter macrocephalus](#) Sperm Whale [59]		Species or species habitat may occur within area
[Pristis clavata](#) Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding likely to occur within area
[Pristis pristis](#) Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat may occur within area
[Pristis zijsron](#) Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area
[Rhincodon typus](#) Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
[Sousa sahulensis as Sousa chinensis](#) Australian Humpback Dolphin [87942]	Vulnerable	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 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 may occur within area
[Hirundo rustica](#) Barn Swallow [662]		Species or species habitat may occur within area
Migratory Wetlands Species		

Scientific Name	Threatened Category	Presence Text
Acrocephalus orientalis Oriental Reed-Warbler [59570]		Species or species habitat may occur within area
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Species or species habitat likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Limosa lapponica		
Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Limosa limosa		
Black-tailed Godwit [845]	Endangered	Species or species habitat likely to occur within area
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Pandion haliaetus		
Osprey [952]		Species or species habitat likely to occur within area
Thalasseus bergii		
Greater Crested Tern [83000]		Breeding likely 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
Department of Defence	
NHULUNBUY JORN SITE [DD_0486]	NT
Nhulunbuy Training Depot [DD_1520]	NT
Department of Finance	
N.T. Portion 01045 plan(s) A 000776 [AGPR6610]	NT
N.T. Portion 01045 plan(s) A 000776 [AGPR007680]	NT
National Indigenous Australians Agency	
Lot 00983 Plan S72/248H [AGPR180]	NT
Lot 01240 Plan S80/140A [AGPR5951]	NT
Lot 1238 Plan S80/140A [AGPR5950]	NT

Commonwealth Land Name	State
Lot 1239 Plan S80/140A [AGPR5952]	NT
Lot 1361 S88/264 [AGPR923]	NT
Lot 1362 Plan S88/264 [AGPR922]	NT
Lot 1378 Plan S89/335 [AGPR6141]	NT
Lot 1382 Plan S89/335 [AGPR6140]	NT
Lot 1444 Plan S94/186 [AGPR6500]	NT
Lot 1490 Plan S89/335 [AGPR6488]	NT
Lot 1521 Plan S99/24 [AGPR5960]	NT
Lot 627 Plan S89/335 [AGPR6609]	NT
Lot 667 Plan S73/023 [AGPR6022]	NT
Lot 914 Plan S89/335 [AGPR300]	NT
Unit A and B Lot 1404 Plan 92/216 [AGPR5893]	NT
Unit A and B Lot 607 Plan S89/335 [AGPR6487]	NT
Services Australia	
Lot 01030 S 74/048A [AGPR6532]	NT
Lot 01325 S 83/152 [AGPR6608]	NT

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
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 likely to occur within area
Anous stolidus Common Noddy [825]		Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
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
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	Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Calidris tenuirostris Great Knot [862]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Cecropis daurica as Hirundo daurica Red-rumped Swallow [80610]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Chalcites osculans as Chrysococcyx osculans		
Black-eared Cuckoo [83425]		Species or species habitat may occur within area overfly marine area
Charadrius leschenaultii		
Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius veredus		
Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area overfly marine area
Fregata ariel		
Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Fregata minor		
Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
Glareola maldivarum		
Oriental Pratincole [840]		Species or species habitat may occur within area overfly marine area
Haliaeetus leucogaster		
White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hirundo rustica		
Barn Swallow [662]		Species or species habitat may occur within area overfly marine area
Limnodromus semipalmatus		
Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area overfly marine area
Limosa lapponica		
Bar-tailed Godwit [844]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Limosa limosa Black-tailed Godwit [845]	Endangered	Species or species habitat likely to occur within area overfly marine area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Onychoprion anaethetus as Sterna anaethetus Bridled Tern [82845]		Breeding likely to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat likely to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area overfly marine area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area overfly marine area
Sterna dougallii Roseate Tern [817]		Breeding likely to occur within area
Sterna sumatrana Black-naped Tern [800]		Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
[Sternula albifrons as Sterna albifrons](#) Little Tern [82849]	Vulnerable	Breeding likely to occur within area
[Thalasseus bergii as Sterna bergii](#) Greater Crested Tern [83000]		Breeding likely to occur within area
[Tringa nebularia](#) Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area
Fish		
[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](#) Yellow-banded 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 schultzi](#) Schultz's Pipefish [66205]		Species or species habitat may occur within area
[Doryrhamphus dactyliophorus](#) Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
Halicampus spinirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophora as Haliichthys taeniophorus Ribboned Pipehorse, Ribboned Pipefish, Ribboned Seadragon [94706]		Species or species habitat may occur within area
Hippichthys cyanospilos Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area
Hippichthys parvicarinatus Short-keel Pipefish, Short-keeled Pipefish [66230]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
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		
Dugong dugon Dugong [28]		Species or species habitat likely to occur within area
Reptile		
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

Scientific Name	Threatened Category	Presence Text
Aipysurus mosaicus as Aipysurus eydouxii Mosaic Sea Snake [87261]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Crocodylus johnstoni Freshwater Crocodile, Johnston's Crocodile, Johnstone's Crocodile [1773]		Species or species habitat may occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Hydrelaps darwiniensis Port Darwin Sea Snake, Black-ringed Mangrove Sea Snake [1100]		Species or species habitat may occur within area
Hydrophis atriceps Black-headed Sea Snake, Banded Sea Snake [1101]		Species or species habitat may occur within area
Hydrophis czeblukovi Fine-spined Sea Snake [59233]		Species or species habitat may occur within area
Hydrophis elegans Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area
Hydrophis hardwickii as Lapemis hardwickii Spine-bellied Sea Snake [93516]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hydrophis inornatus Plain Sea Snake [1107]		Species or species habitat may occur within area
Hydrophis kingii as Disteira kingii Spectacled Sea Snake [93511]		Species or species habitat may occur within area
Hydrophis macdowelli as Hydrophis mcdowelli MacDowell's Sea Snake, Small-headed Sea Snake, [75601]		Species or species habitat may occur within area
Hydrophis major as Disteira major Olive-headed Sea Snake [93512]		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 zweifeli as Enhydrina schistosa Australian Beaked Sea Snake [93514]		Species or species habitat may occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Parahydrophis mertoni Arafura Smooth Sea Snake, Northern Mangrove Sea Snake [1090]		Species or species habitat may occur within area

Whales and Other Cetaceans		[Resource Information]
Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Balaenoptera omurai Omura's Whale [87136]		Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat may occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely 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]	Vulnerable	Species or species habitat likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely 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
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
Wessel	Habitat Protection Zone (IUCN IV)
Arafura	Special Purpose Zone (Trawl) (IUCN VI)
Wessel	Special Purpose Zone (Trawl) (IUCN VI)

Habitat Critical to the Survival of Marine Turtles		[Resource Information]
Scientific Name	Behaviour	Presence
All year (Jun - Aug)		
Natator depressus Flatback Turtle [59257]	Nesting	Known to occur
Dec - Jan		
Dermochelys coriacea Leatherback Turtle [1768]	Nesting	Known to occur
May - Jul		

Scientific Name	Behaviour	Presence
Lepidochelys olivacea Olive Ridley Turtle [1767]	Nesting	Known to occur
Oct - Feb		
Eretmochelys imbricata Hawksbill Turtle [1766]	Nesting	Known to occur
Oct - Mar		
Chelonia mydas Green Turtle [1765]	Nesting	Known to occur

Extra Information

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Arnhem Space Centre Operations (Down Range Recovery)	2023/09657		Completed
Controlled action			
Katherine to Gove Gas Pipeline Project	2012/6605	Controlled Action	Post-Approval
PNG-Qld Gas Pipeline - Gove Lateral	2006/2615	Controlled Action	Completed
Trans-territory Gas Pipeline	2003/1186	Controlled Action	Completed
Not controlled action			
Borrow area development, Gove operations, Rio Tinto Aluminium, Nhulunbuy NT	2017/8114	Not Controlled Action	Completed
External Borrow Pit for Pond 6 South	2011/5970	Not Controlled Action	Completed
Geo-scientific survey	2005/2004	Not Controlled Action	Completed
Gove Alumina Refinery Expansion	2003/1068	Not Controlled Action	Completed
Not controlled action (particular manner)			
2D Marine Seismic Survey	2009/4728	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
2D Seismic survey	2009/5076	Not Controlled Action (Particular Manner)	Post-Approval
External Borrow Pit for Stage 2 Construction of Additional Waste Storage Pond 8, NT	2011/5849	Not Controlled Action (Particular Manner)	Post-Approval
Kingtree & Ironstone-1 Exploration Wells	2011/5935	Not Controlled Action (Particular Manner)	Post-Approval
NT/P74 & NT/P75 - 2D marine seismic survey	2008/4316	Not Controlled Action (Particular Manner)	Post-Approval
temporary boat disposal	2005/2281	Not Controlled Action (Particular Manner)	Post-Approval
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
2D Marine Seismic Survey	2008/4623	Referral Decision	Completed
Addtional , Standalone Containment Pond	2012/6347	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
Gulf of Carpentaria basin	North
Tributary Canyons of the Arafura Depression	North

Biologically Important Areas

[Resource Information]

Scientific Name	Behaviour	Presence
Marine Turtles		
Chelonia mydas		
Green Turtle [1765]	Foraging	Known to occur

Scientific Name	Behaviour	Presence
Chelonia mydas Green Turtle [1765]	Reproduction	Likely to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Reproduction	Known to occur
Lepidochelys olivacea Olive Ridley Turtle [1767]	Reproduction	Likely to occur
Natator depressus Flatback Turtle [59257]	Reproduction	Known to occur
Seabirds		
Anous stolidus Common Noddy [825]	Reproduction	Known to occur
Onychoprion anaethetus Bridled Tern [82845]	Reproduction	Known to occur
Sterna dougallii Roseate Tern [817]	Reproduction	Known to occur
Thalasseus bergii Crested Tern [83000]	Reproduction	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 is 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 on the contents of this report.

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 point locations and environmental data layers.

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 when time permits.

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 breeding sites; and
- 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: 26-Jun-2026

Summary

Details

- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat

Acknowledgements

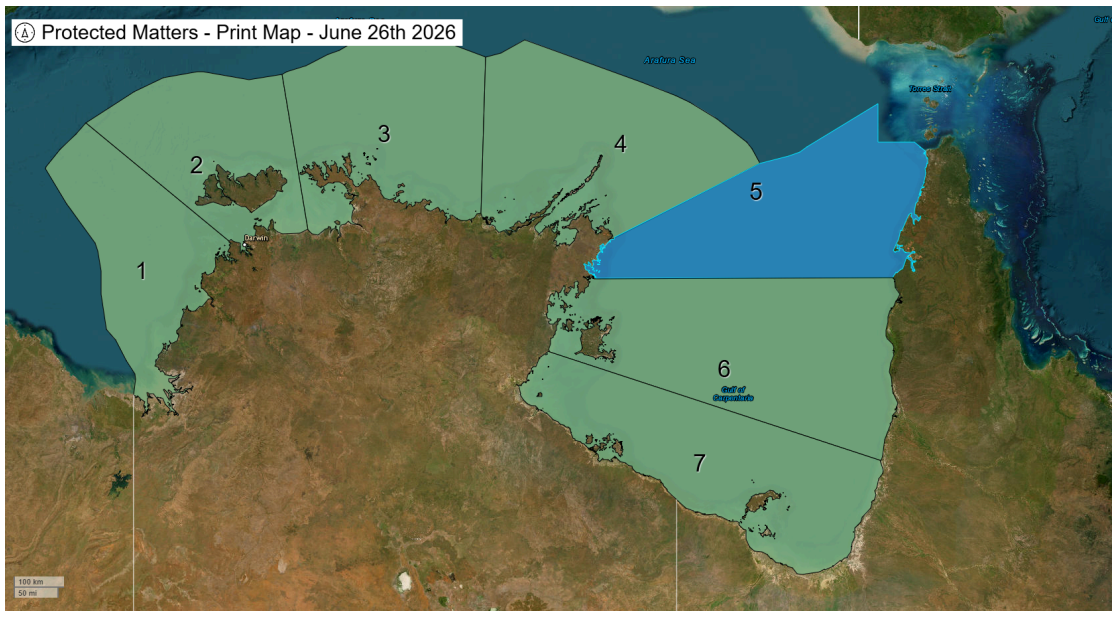


Figure 1: North Marine Region - Part 5

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	61
Listed Migratory Species:	59

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	7
Commonwealth Heritage Places:	None
Listed Marine Species:	115
Whales and Other Cetaceans:	14
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	5
Habitat Critical to the Survival of Marine Turtles:	5

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	2
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	18
Key Ecological Features (Marine):	2
Biologically Important Areas:	11
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Commonwealth Marine Area [Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Chloebia gouldiae listed as Erythrura gouldiae Gouldian Finch [90091]	Endangered	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Falcunculus frontatus whitei Crested Shrike-tit (northern), Northern Shrike-tit [26013]	Vulnerable	Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Probosciger aterrimus macgillivrayi Palm Cockatoo (Australian) [67033]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding 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
MAMMAL		

Scientific Name	Threatened Category	Presence Text
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat may occur within area
Conilurus penicillatus Brush-tailed Rabbit-rat, Brush-tailed Tree-rat, Pakooma [132]	Vulnerable	Species or species habitat may occur within area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area
Hipposideros semoni Semon's Leaf-nosed Bat, Greater Wart-nosed Horseshoe-bat [180]	Vulnerable	Species or species habitat may occur within area
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area
Mesembriomys gouldii gouldii Black-footed Tree-rat (Kimberley and mainland Northern Territory), Djintamoonga, Manbul [87618]	Endangered	Species or species habitat likely to occur within area
Mesembriomys gouldii rattoides Black-footed Tree-rat (north Queensland), Shaggy Rabbit-rat [87620]	Vulnerable	Species or species habitat likely to occur within area
Notomys aquilo Northern Hopping-mouse, Woorrentinta [123]	Endangered	Species or species habitat may occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Petrogale concinna canescens Nabarlek (Top End) [87606]	Endangered	Species or species habitat may occur within area
Phascogale pirata Northern Brush-tailed Phascogale [82954]	Vulnerable	Species or species habitat may occur within area
Rhinolophus robertsi Large-eared Horseshoe Bat, Greater Large-eared Horseshoe Bat, Lesser Large-eared Horseshoe Bat [87639]	Vulnerable	Species or species habitat may occur within area
Saccolaimus saccolaimus nudicluniatus Bare-rumped Sheath-tailed Bat, Bare-rumped Sheathtail Bat [66889]	Vulnerable	Species or species habitat likely to occur within area
Sousa sahulensis Australian Humpback Dolphin [87942]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
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 likely to occur within area
PLANT		
Bruguiera x hainesii Haines's Orange Mangrove [91351]	Critically Endangered	Species or species habitat may occur within area
Calophyllum bicolor [11371]	Vulnerable	Species or species habitat likely to occur within area
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

Scientific Name	Threatened Category	Presence Text
Dendrobium johannis		
Chocolate Tea Tree Orchid [13585]	Vulnerable	Species or species habitat likely to occur within area
Erythroxylum sp. Cholmondely Creek (J.R.Clarkson 9367) (Northern Territory Population)		
[91740]	Vulnerable	Species or species habitat may occur within area
Solanum dunalianum		
[13819]	Vulnerable	Species or species habitat likely to occur within area
Vappodes phalaenopsis		
Cooktown Orchid [78894]	Vulnerable	Species or species habitat may 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 may occur within area
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Egernia rugosa		
Yakka Skink [1420]	Vulnerable	Species or species habitat may occur within area
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Lepidochelys olivacea		
Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding likely 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 [1568]	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 glyphis Speartooth Shark [82453]	Critically Endangered	Species or species habitat likely to occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding likely to occur within area
Pristis pristis Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat likely to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
null		
Balaenoptera omurai Omura's Whale [87136]		Species or species habitat likely to occur within area
Migratory Marine Birds		

Scientific Name	Threatened Category	Presence Text
Anous stolidus Common Noddy [825]		Breeding likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat likely to occur within area
Sterna dougallii Roseate Tern [817]		Breeding likely to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding likely to occur within area
Migratory Marine Species		
Anoxypristis cuspidata Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat may occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat may occur within area
Carcharias taurus Grey Nurse Shark [64469]		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	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Dugong dugon Dugong [28]		Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Mobula alfredi as Manta alfredi		
Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat likely 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 likely to occur within area
Orcaella heinsohni		
Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area
Orcinus orca		
Killer Whale, Orca [46]		Species or species habitat may occur within area
Pristis clavata		
Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding likely to occur within area
Pristis pristis		
Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat likely to occur within area
Pristis zijsron		
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sousa sahulensis as Sousa chinensis		
Australian Humpback Dolphin [87942]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Migratory Terrestrial Species		
Cecropis daurica		
Red-rumped Swallow [80610]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area
Migratory Wetlands Species		
Acrocephalus orientalis Oriental Reed-Warbler [59570]		Species or species habitat may occur within area
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Numenius phaeopus Whimbrel [849]		Roosting likely to occur within area
Pandion haliaetus Osprey [952]		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
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting 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
Bureau of Meteorology	
Lot 1 on MPH35644 [AGPR2812]	QLD
Department of Defence	
Weipa Training Depot - Kerr Point Drive [DD_3131]	QLD
Department of Home Affairs	
Lot 42 on MP37500 [AGPR2804]	QLD
Lot 44 on MP37500 [AGPR2806]	QLD
Lot 50 on MP37500 [AGPR2807]	QLD
Lot 51 on MP37500 [AGPR2805]	QLD
Services Australia	
Lot 217 on MPH41093 [AGPR2813]	QLD

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
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 likely to occur within area
Anous stolidus Common Noddy [825]		Breeding likely to occur within area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine 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	Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Cecropis daurica as Hirundo daurica Red-rumped Swallow [80610]		Species or species habitat may occur within area overfly marine area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat may occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area overfly marine area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Roosting likely to occur within area overfly marine area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area overfly marine area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area overfly marine area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat may occur within area overfly marine area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely 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 likely to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat likely to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely 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
Sterna dougallii Roseate Tern [817]		Breeding likely to occur within area
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Breeding likely to occur within area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat likely to occur within area overfly marine area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting likely to occur within area overfly marine area
Fish		
Acentronura tentaculata Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area
Campichthys tricarinatus Three-keel Pipefish [66192]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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 Yellow-banded Pipefish [66200]		Species or species habitat may occur within area
Corythoichthys intestinalis Australian Messmate Pipefish, Banded Pipefish [66202]		Species or species habitat may occur within area
Corythoichthys 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 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

Scientific Name	Threatened Category	Presence Text
Festucalex cinctus Girdled Pipefish [66214]		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
Haliichthys taeniophora as Haliichthys taeniophorus Ribboned Pipehorse, Ribboned Pipefish, Ribboned Seadragon [94706]		Species or species habitat may occur within area
Hippichthys cyanospilos Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area
Hippichthys heptagonus Madura Pipefish, Reticulated Freshwater Pipefish [66229]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippichthys spicifer Belly-barred Pipefish, Banded Freshwater Pipefish [66232]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
Hippocampus zebra Zebra Seahorse [66241]		Species or species habitat may occur within area
Micrognathus brevirostris thorntail Pipefish, Thorn-tailed Pipefish [66254]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Microphis brachyurus Short-tail Pipefish, Short-tailed River Pipefish [66257]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
[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		
[Dugong dugon](#) Dugong [28]		Species or species habitat likely to occur within area
Reptile		
[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	Breeding likely to occur within area
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
[Crocodylus johnstoni](#) Freshwater Crocodile, Johnston's Crocodile, Johnstone's Crocodile [1773]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Hydrelaps darwiniensis Port Darwin Sea Snake, Black-ringed Mangrove Sea Snake [1100]		Species or species habitat may occur within area
Hydrophis atriceps Black-headed Sea Snake, Banded Sea Snake [1101]		Species or species habitat may occur within area
Hydrophis czeblukovi Fine-spined Sea Snake [59233]		Species or species habitat may occur within area
Hydrophis elegans Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area
Hydrophis hardwickii as Lapemis hardwickii Spine-bellied Sea Snake [93516]		Species or species habitat may occur within area
Hydrophis inornatus Plain Sea Snake [1107]		Species or species habitat may occur within area
Hydrophis kingii as Disteira kingii Spectacled Sea Snake [93511]		Species or species habitat may occur within area
Hydrophis macdowelli as Hydrophis mcdowelli MacDowell's Sea Snake, Small-headed Sea Snake, [75601]		Species or species habitat may occur within area
Hydrophis major as Disteira major Olive-headed Sea Snake [93512]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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 zweifeli 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
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Microcephalophis gracilis as Hydrophis gracilis		
Graceful Small-headed Sea Snake, Slender Sea Snake [87375]		Species or species habitat may occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Breeding likely to occur within area
Parahydrophis mertoni		
Arafura Smooth Sea Snake, Northern Mangrove Sea Snake [1090]		Species or species habitat may occur within area

Whales and Other Cetaceans [Resource Information]

Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Species or species habitat may 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 may occur within area
Balaenoptera omurai		
Omura's Whale [87136]		Species or species habitat likely to occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Species or species habitat may occur within area
Delphinus delphis		
Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Grampus griseus		
Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Orcaella heinsohni		
Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area

Current Scientific Name	Status	Type of Presence
Orcinus orca Killer Whale, Orca [46]		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]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Australian Marine Parks	[Resource Information]
Park Name	Zone & IUCN Categories
Wessel	Habitat Protection Zone (IUCN IV)
West Cape York	Habitat Protection Zone (IUCN IV)
West Cape York	National Park Zone (IUCN II)
West Cape York	National Park Zone (IUCN II)
West Cape York	Special Purpose Zone (IUCN VI)

Habitat Critical to the Survival of Marine Turtles		[Resource Information]
Scientific Name	Behaviour	Presence
All year (Jun - Aug)		
Natator depressus Flatback Turtle [59257]	Nesting	Known to occur

Scientific Name	Behaviour	Presence
Dec - Jan		
Dermochelys coriacea Leatherback Turtle [1768]	Nesting	Known to occur
May - Jul		
Lepidochelys olivacea Olive Ridley Turtle [1767]	Nesting	Known to occur
Oct - Feb		
Eretmochelys imbricata Hawksbill Turtle [1766]	Nesting	Known to occur
Oct - Mar		
Chelonia mydas Green Turtle [1765]	Nesting	Known to occur

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State
Pine River Bay	Fish Habitat Area (A)	QLD
Pine River Bay	Fish Habitat Area (B)	QLD

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Arnhem Space Centre Operations (Down Range Recovery)	2023/09657		Completed
Aurukun Bauxite Project	2020/8624		Assessment
Controlled action			
Bauxite Hill Mining and Barging Project	2015/7538	Controlled Action	Post-Approval
Bauxite Hills Mine and Port Project	2012/6246	Controlled Action	Completed
Hey Point bauxite mining project, approx 10kms south Weipa, Qld	2014/7382	Controlled Action	Post-Approval
Pisolite Hills bauxite mine and associated infrast	2008/4046	Controlled Action	Completed
PNG-Qld Gas Pipeline - Gove Lateral	2006/2615	Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Skardon River Bauxite Mining Project, Weipa, QLD	2014/7305	Controlled Action	Post-Approval
South of the Embley Bauxite Mine Extension, including Construction of Port and Infrastructure	2008/4435	Controlled Action	Completed
South of the Embley Bauxite Mining Project	2010/5642	Controlled Action	Post-Approval
Urquhart Bauxite Project, North Qld	2016/7706	Controlled Action	Post-Approval
Urquhart Point mineral sands project	2010/5707	Controlled Action	Post-Approval
Not controlled action			
Dredging of Weipa South Channel	2003/1311	Not Controlled Action	Completed
Extension of Lorim Point Wharf	2004/1749	Not Controlled Action	Completed
Not controlled action (particular manner)			
2D Seismic Survey, Permit Area Q23P	2009/4925	Not Controlled Action (Particular Manner)	Post-Approval
Kingtree & Ironstone-1 Exploration Wells	2011/5935	Not Controlled Action (Particular Manner)	Post-Approval
Two dimensional (2d) seismic survey in Gulf of Carpentaria	2013/6991	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
Capital Dredging Weipa South Channel	2003/1302	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
Gulf of Carpentaria basin	North
Gulf of Carpentaria coastal zone	North

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence
Dolphins		
Sousa sahulensis Australian Humpback Dolphin [87942]	Foraging	Likely to occur
Tursiops aduncus Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Reproduction	Known to occur
Marine Turtles		
Chelonia mydas Green Turtle [1765]	Foraging	Known to occur
Chelonia mydas Green Turtle [1765]	Reproduction	Likely to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Reproduction	Known to occur
Lepidochelys olivacea Olive Ridley Turtle [1767]	Reproduction	Likely to occur
Natator depressus Flatback Turtle [59257]	Reproduction	Known to occur
Seabirds		
Anous stolidus Common Noddy [825]	Reproduction	Known to occur
Fregata ariel Lesser Frigatebird [1012]	Foraging	Likely to occur
Onychoprion anaethetus Bridled Tern [82845]	Reproduction	Known to occur
Sterna dougallii Roseate Tern [817]	Reproduction	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 is 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 on the contents of this report.

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 point locations and environmental data layers.

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 when time permits.

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 breeding sites; and
- 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: 26-Jun-2026

[Summary](#)
[Details](#)
- [Matters of NES](#)
- [Other Matters Protected by the EPBC Act](#)
- [Extra Information](#)

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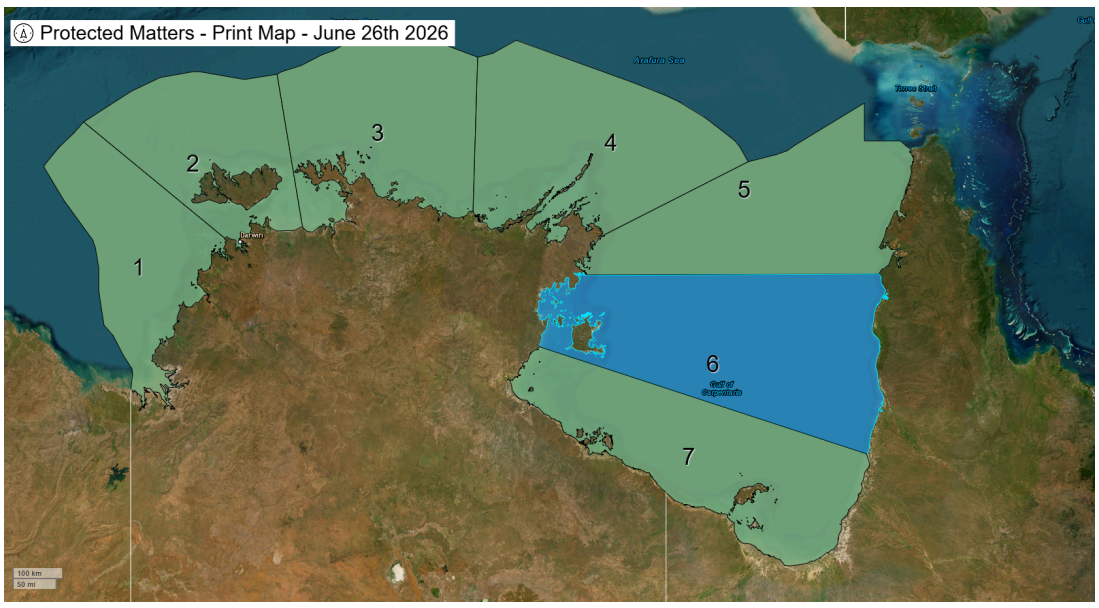


Figure 1: North Marine Region - Part 6

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	61
Listed Migratory Species:	72

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	4
Commonwealth Heritage Places:	None
Listed Marine Species:	119
Whales and Other Cetaceans:	14
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	2
Habitat Critical to the Survival of Marine Turtles:	4

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	2
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	13
Key Ecological Features (Marine):	3
Biologically Important Areas:	10
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Commonwealth Marine Area [Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting likely to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting likely to occur within area
Chloebia gouldiae listed as Erythrura gouldiae Gouldian Finch [90091]	Endangered	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat likely to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area
Falcunculus frontatus whitei Crested Shrike-tit (northern), Northern Shrike-tit [26013]	Vulnerable	Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat may occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting likely to occur within area
Probosciger aterrimus macgillivrayi Palm Cockatoo (Australian) [67033]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding 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
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Roosting likely to occur within area
MAMMAL		
Antechinus bellus Fawn Antechinus [344]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat may occur within area
Conilurus penicillatus Brush-tailed Rabbit-rat, Brush-tailed Tree-rat, Pakooma [132]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area
Mesembriomys gouldii rattoides Black-footed Tree-rat (north Queensland), Shaggy Rabbit-rat [87620]	Vulnerable	Species or species habitat may occur within area
Notomys aquilo Northern Hopping-mouse, Woorrentinta [123]	Endangered	Species or species habitat likely to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area
Petrogale concinna canescens Nabarlek (Top End) [87606]	Endangered	Species or species habitat likely to occur within area
Phascogale pirata Northern Brush-tailed Phascogale [82954]	Vulnerable	Species or species habitat may occur within area
Rhinolophus robertsi Large-eared Horseshoe Bat, Greater Large-eared Horseshoe Bat, Lesser Large-eared Horseshoe Bat [87639]	Vulnerable	Species or species habitat may occur within area
Saccolaimus saccolaimus nudicluniatus Bare-rumped Sheath-tailed Bat, Bare-rumped Sheathtail Bat [66889]	Vulnerable	Species or species habitat likely to occur within area
Sousa sahulensis Australian Humpback Dolphin [87942]	Vulnerable	Species or species habitat likely to occur within area
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 likely to occur within area
PLANT		

Scientific Name	Threatened Category	Presence Text
[Dendrobium bigibbum](#) Cooktown Orchid [10306]	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
[Vappodes phalaenopsis](#) Cooktown Orchid [78894]	Vulnerable	Species or species habitat likely to occur within area
REPTILE		
[Acanthophis hawkei](#) Plains Death Adder [83821]	Vulnerable	Species or species habitat may occur within area
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
[Egernia rugosa](#) Yakka Skink [1420]	Vulnerable	Species or species habitat likely to occur within area
[Eretmochelys imbricata](#) Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
[Lepidochelys olivacea](#) Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area
[Natator depressus](#) Flatback Turtle [59257]	Vulnerable	Breeding likely to occur within area
[Tiliqua scincoides intermedia](#) Northern Blue-tongued Skink [89838]	Critically Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Varanus mertensi		
Mertens' 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 may occur within area
SHARK		
Carcharodon carcharias		
White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Glyphis glyphis		
Speartooth Shark [82453]	Critically Endangered	Species or species habitat may occur within area
Pristis clavata		
Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding likely to occur within area
Pristis pristis		
Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat likely to occur within area
Pristis zijsron		
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sphyrna lewini		
Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
null		
Balaenoptera omurai		
Omura's Whale [87136]		Species or species habitat likely to occur within area
Migratory Marine Birds		

Scientific Name	Threatened Category	Presence Text
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat likely to occur within area
Sterna dougallii Roseate Tern [817]		Breeding likely to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding likely to occur within area
Migratory Marine Species		
Anoxypristis cuspidata Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat may occur within area
Carcharias taurus Grey Nurse Shark [64469]		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	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Dugong dugon Dugong [28]		Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat likely 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 likely to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding likely to occur within area
Pristis pristis Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat likely to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sousa sahulensis as Sousa chinensis Australian Humpback Dolphin [87942]	Vulnerable	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

Scientific Name	Threatened Category	Presence Text
[Cuculus optatus](#) Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
[Hirundo rustica](#) Barn Swallow [662]		Species or species habitat may occur within area
[Motacilla cinerea](#) Grey Wagtail [642]		Species or species habitat may occur within area
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
[Acrocephalus orientalis](#) Oriental Reed-Warbler [59570]		Species or species habitat may occur within area
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat likely to occur within area
[Arenaria interpres](#) Ruddy Turnstone [872]	Vulnerable	Roosting likely to occur within area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
[Calidris alba](#) Sanderling [875]		Roosting likely to occur within area
[Calidris canutus](#) Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area
[Calidris falcinellus as Limicola falcinellus](#) Broad-billed Sandpiper [91731]		Roosting likely to occur within area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting likely to occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting likely to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Glareola maldivarum Oriental Pratincole [840]		Roosting may occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting likely to occur within area

Scientific Name	Threatened Category	Presence Text
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Numenius phaeopus Whimbrel [849]		Roosting likely to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting likely to occur within area
Thalasseus bergii Greater Crested Tern [83000]		Breeding likely to occur within area
Tringa brevipes Grey-tailed Tattler [851]		Roosting likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting likely to occur within area
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Roosting 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
Department of Defence	
Aurukun Training Depot [DD_3134]	QLD
Groote Eylandt Training Depot [DD_0833]	NT
JORN Radar Site - Groote Eylandt [DD_3212]	NT
Pormpuraaw Training Depot [DD_3133]	QLD

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
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 likely to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat likely 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]	Vulnerable	Roosting likely to occur within area

Scientific Name	Threatened Category	Presence Text
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	Species or species habitat likely to occur within area
Calidris alba Sanderling [875]		Roosting likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Calidris falcinellus as Limicola falcinellus Broad-billed Sandpiper [91731]		Roosting likely to occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area overfly marine area
Calidris ruficollis Red-necked Stint [860]		Roosting likely to occur within area overfly marine area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting likely to occur within area overfly marine area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Cecropis daurica as Hirundo daurica Red-rumped Swallow [80610]		Species or species habitat may occur within area overfly marine area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat may occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting likely to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Species or species habitat likely to occur within area overfly marine area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area overfly marine area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area overfly marine area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area
Glareola maldivarum Oriental Pratincole [840]		Roosting may occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Roosting likely to occur within area overfly marine area
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area overfly marine area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting likely to occur within area overfly marine 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 may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat may occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely 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 likely to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat likely to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting likely to occur within area overfly marine area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely 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
Sterna dougallii Roseate Tern [817]		Breeding likely to occur within area
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Breeding likely to occur within area
Stiltia isabella Australian Pratincole [818]		Species or species habitat likely to occur within area overfly marine area
Thalasseus bergii as Sterna bergii Greater Crested Tern [83000]		Breeding likely to occur within area
Tringa brevipes as Heteroscelus brevipes Grey-tailed Tattler [851]		Roosting likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting likely to occur within area overfly marine area
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Roosting likely to occur within area overfly marine area
Fish		
Acentronura tentaculata Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Campichthys tricarinatus Three-keel Pipefish [66192]		Species or species habitat may occur within area
Choeroichthys brachysoma Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
Corythoichthys amplexus Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area
Corythoichthys flavofasciatus Yellow-banded Pipefish [66200]		Species or species habitat may occur within area
Corythoichthys intestinalis Australian Messmate Pipefish, Banded Pipefish [66202]		Species or species habitat may occur within area
Corythoichthys 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 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

Scientific Name	Threatened Category	Presence Text
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
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 spinirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophora as Haliichthys taeniophorus Ribboned Pipehorse, Ribboned Pipefish, Ribboned Seadragon [94706]		Species or species habitat may occur within area
Hippichthys cyanospilos Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
Micrognathus brevirostris thorntail Pipefish, Thorn-tailed Pipefish [66254]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		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
[Dugong dugon](#) Dugong [28]		Species or species habitat likely to occur within area
Reptile		
[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	Breeding likely to occur within area
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
[Crocodylus johnstoni](#) Freshwater Crocodile, Johnston's Crocodile, Johnstone's Crocodile [1773]		Species or species habitat may occur within area
[Crocodylus porosus](#) Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
[Eretmochelys imbricata](#) Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
[Hydrelaps darwiniensis](#) Port Darwin Sea Snake, Black-ringed Mangrove Sea Snake [1100]		Species or species habitat may occur within area
[Hydrophis atriceps](#) Black-headed Sea Snake, Banded Sea Snake [1101]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hydrophis caerulescens Dwarf Sea Snake [1103]		Species or species habitat may occur within area
Hydrophis elegans Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area
Hydrophis hardwickii as Lapemis hardwickii Spine-bellied Sea Snake [93516]		Species or species habitat may occur within area
Hydrophis inornatus Plain Sea Snake [1107]		Species or species habitat may occur within area
Hydrophis kingii as Disteira kingii Spectacled Sea Snake [93511]		Species or species habitat may occur within area
Hydrophis macdowelli as Hydrophis mcdowelli MacDowell's Sea Snake, Small-headed Sea Snake, [75601]		Species or species habitat may occur within area
Hydrophis major as Disteira major Olive-headed Sea Snake [93512]		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

Scientific Name	Threatened Category	Presence Text
Hydrophis stokesii as Astrotia stokesii Stokes' Sea Snake [93510]		Species or species habitat may occur within area
Hydrophis zweifeli as Enhydrina schistosa Australian Beaked Sea Snake [93514]		Species or species habitat may occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding likely to occur within area
Parahydrophis mertoni Arafura Smooth Sea Snake, Northern Mangrove Sea Snake [1090]		Species or species habitat may occur within area

Whales and Other Cetaceans		[Resource Information]
Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat may 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 may occur within area
Balaenoptera omurai Omura's Whale [87136]		Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat may occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		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]	Vulnerable	Species or species habitat likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Australian Marine Parks	[Resource Information]
Park Name	Zone & IUCN Categories
Gulf of Carpentaria	National Park Zone (IUCN II)
Gulf of Carpentaria	Special Purpose Zone (Trawl) (IUCN VI)

Habitat Critical to the Survival of Marine Turtles		[Resource Information]
Scientific Name	Behaviour	Presence
All year (Jun - Aug)		
Natator depressus Flatback Turtle [59257]	Nesting	Known to occur

Scientific Name	Behaviour	Presence
May - Jul		
Lepidochelys olivacea Olive Ridley Turtle [1767]	Nesting	Known to occur
Oct - Feb		
Eretmochelys imbricata Hawksbill Turtle [1766]	Nesting	Known to occur
Oct - Mar		
Chelonia mydas Green Turtle [1765]	Nesting	Known to occur

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State
Nassau River	Fish Habitat Area (A)	QLD
Rutland Plains	Nature Refuge	QLD

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Arnhem Space Centre Operations (Down Range Recovery)	2023/09657		Completed
Aurukun Bauxite Project	2020/8624		Assessment
Southern Lease Mining Project	2023/09457		Assessment
Winchelsea Island Manganese Mine Project, NT	2021/8877		Assessment
Controlled action			
Eastern Leases Project, Groote Eylandt, Northern Territory	2014/7228	Controlled Action	Post-Approval
South of the Embley Bauxite Mine Extension, including Construction of Port and Infrastructure	2008/4435	Controlled Action	Completed
South of the Embley Bauxite Mining Project	2010/5642	Controlled Action	Post-Approval
Not controlled action			
Eastern Leases 2010 Exploration Drilling Program	2010/5455	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
Pormpuraaw Community Sewerage Facility	2002/690	Not Controlled Action	Completed
Not controlled action (particular manner)			
Acoustic and Resistivity Sub-Bottom Profiling Survey	2011/6116	Not Controlled Action (Particular Manner)	Post-Approval
Eastern Leases 2013 Exploration Drilling Program, Groote Eylandt, NT	2013/6848	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
Groote Eylandt Offshore Marine Surveys	2010/5643	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
Gulf of Carpentaria basin	North
Gulf of Carpentaria coastal zone	North
Submerged coral reefs of the Gulf of Carpentaria	North

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence
Marine Turtles		
Chelonia mydas Green Turtle [1765]	Foraging	Known to occur
Chelonia mydas Green Turtle [1765]	Reproduction	Likely to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Reproduction	Known to occur
Lepidochelys olivacea Olive Ridley Turtle [1767]	Reproduction	Likely to occur

Scientific Name	Behaviour	Presence
Natator depressus Flatback Turtle [59257]	Reproduction	Known to occur
Seabirds		
Fregata ariel Lesser Frigatebird [1012]	Foraging	Likely to occur
Fregata ariel Lesser Frigatebird [1012]	Reproduction	Known to occur
Onychoprion anaethetus Bridled Tern [82845]	Reproduction	Known to occur
Sterna dougallii Roseate Tern [817]	Reproduction	Known to occur
Thalasseus bergii Crested Tern [83000]	Reproduction	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 is 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 on the contents of this report.

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 point locations and environmental data layers.

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 when time permits.

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 breeding sites; and
- 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.

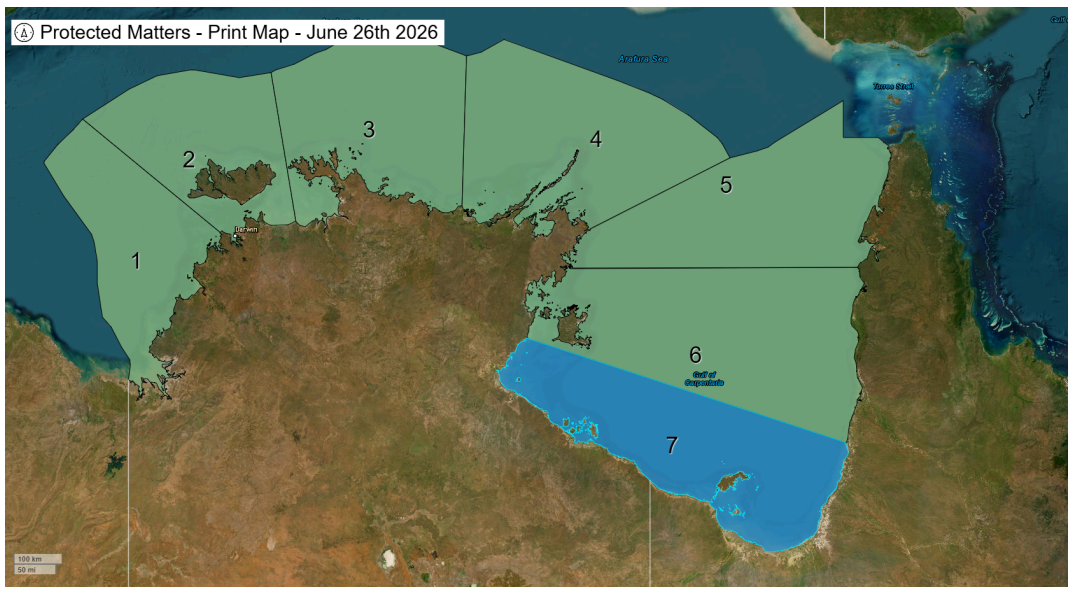


Figure 1: North Marine Region - Part 7

Report created: 26-Jun-2026

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Details
Matters of NES
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Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	53
Listed Migratory Species:	75

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	1
Commonwealth Heritage Places:	None
Listed Marine Species:	113
Whales and Other Cetaceans:	14
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	4
Habitat Critical to the Survival of Marine Turtles:	3

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	9
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	9
Key Ecological Features (Marine):	4
Biologically Important Areas:	11
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Commonwealth Marine Area [Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting likely to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting likely to occur within area
Chloebia gouldiae listed as Erythrura gouldiae Gouldian Finch [90091]	Endangered	Species or species habitat likely to occur within area
Erythrotriorchis radiatus Red Goshawk [942]	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 Shrike-tit [26013]	Vulnerable	Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat may occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting likely to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding 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
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Roosting likely to occur within area
MAMMAL		
Antechinus bellus Fawn Antechinus [344]	Vulnerable	Species or species habitat may occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat may occur within area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Phascogale pirata		
Northern Brush-tailed Phascogale [82954]	Vulnerable	Species or species habitat may occur within area
Saccolaimus saccolaimus nudicluniatus		
Bare-rumped Sheath-tailed Bat, Bare-rumped Sheathtail Bat [66889]	Vulnerable	Species or species habitat likely to occur within area
Sousa sahulensis		
Australian Humpback Dolphin [87942]	Vulnerable	Species or species habitat likely to occur within area
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 likely to occur within area
PLANT		
Vappodes phalaenopsis		
Cooktown Orchid [78894]	Vulnerable	Species or species habitat may occur within area
REPTILE		
Acanthophis hawkei		
Plains Death Adder [83821]	Vulnerable	Species or species habitat may occur within area
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to 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 likely to occur within area

Scientific Name	Threatened Category	Presence Text
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding likely 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 [1568]	Endangered	Species or species habitat likely to occur within area
Varanus mitchelli Mitchell's Water Monitor [1569]	Critically Endangered	Species or species habitat may occur within area
SHARK		
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Glyphis glyphis Speartooth Shark [82453]	Critically Endangered	Species or species habitat likely to occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding likely to occur within area
Pristis pristis Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat likely to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
null		
Balaenoptera omurai Omura's Whale [87136]		Species or species habitat likely to occur within area
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Breeding likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Foraging, feeding or related behaviour likely to occur within area
Onychoprion anaethetus Bridled Tern [82845]		Breeding likely to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat may occur within area
Sterna dougallii Roseate Tern [817]		Breeding likely to occur within area
Sterna sumatrana Black-naped Tern [800]		Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding likely to occur within area
Sula leucogaster Brown Booby [1022]		Breeding likely to occur within area
Migratory Marine Species		
Anoxypristis cuspidata Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat may 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 may occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat may occur within area
Carcharias taurus Grey Nurse Shark [64469]		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	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Dugong dugon Dugong [28]		Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat likely 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 likely to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding likely to occur within area
Pristis pristis Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Pristis zijsron		
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sousa sahulensis as Sousa chinensis		
Australian Humpback Dolphin [87942]	Vulnerable	Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Cecropis daurica		
Red-rumped Swallow [80610]		Species or species habitat likely to occur within area
Cuculus optatus		
Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Hirundo rustica		
Barn Swallow [662]		Species or species habitat likely to occur within area
Motacilla cinerea		
Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava		
Yellow Wagtail [644]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
Acrocephalus orientalis		
Oriental Reed-Warbler [59570]		Species or species habitat may occur within area
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat likely to occur within area
Arenaria interpres		
Ruddy Turnstone [872]	Vulnerable	Roosting likely to occur within area

Scientific Name	Threatened Category	Presence Text
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
Calidris alba Sanderling [875]		Roosting likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area
Calidris falcinellus as Limicola falcinellus Broad-billed Sandpiper [91731]		Roosting likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting likely to occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting likely to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Roosting likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area

Scientific Name	Threatened Category	Presence Text
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Glareola maldivarum Oriental Pratincole [840]		Roosting may occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Numenius phaeopus Whimbrel [849]		Roosting likely to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting likely to occur within area
Thalasseus bergii Greater Crested Tern [83000]		Breeding likely to occur within area
Tringa brevipes Grey-tailed Tattler [851]		Roosting likely to occur within area

Scientific Name	Threatened Category	Presence Text
Tringa nebularia		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area
Tringa stagnatilis		
Marsh Sandpiper, Little Greenshank [833]		Roosting likely to occur within area
Xenus cinereus		
Terek Sandpiper [59300]	Vulnerable	Roosting 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
Department of Defence	
Mornington Island Training Depot [DD_3143]	QLD

Listed Marine Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
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 likely to occur within area
Anous stolidus		
Common Noddy [825]		Species or species habitat may occur within area
Anseranas semipalmata		
Magpie Goose [978]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting likely 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	Species or species habitat likely to occur within area
Calidris alba Sanderling [875]		Roosting likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Calidris falcinellus as Limicola falcinellus Broad-billed Sandpiper [91731]		Roosting likely to occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Calidris ruficollis Red-necked Stint [860]		Roosting likely to occur within area overfly marine area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Cecropis daurica as Hirundo daurica Red-rumped Swallow [80610]		Species or species habitat likely to occur within area overfly marine area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting likely to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Roosting likely to occur within area overfly marine area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Roosting likely to occur within area overfly marine area
Chroicocephalus novaehollandiae as Larus novaehollandiae Silver Gull [82326]		Breeding likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Breeding likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Foraging, feeding or related behaviour likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area
Glareola maldivarum Oriental Pratincole [840]		Roosting may occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Roosting likely to occur within area overfly marine area
Hirundo rustica Barn Swallow [662]		Species or species habitat likely to occur within area overfly marine area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting likely to occur within area overfly marine area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely 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 likely to occur within area
Onychoprion anaethetus as Sterna anaethetus Bridled Tern [82845]		Breeding likely to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat may occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Recurvirostra novaehollandiae Red-necked Avocet [871]		Roosting likely to occur within area overfly marine area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely 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
Sterna dougallii Roseate Tern [817]		Breeding likely to occur within area
Sterna sumatrana Black-naped Tern [800]		Breeding likely to occur within area
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Breeding likely to occur within area
Stiltia isabella Australian Pratincole [818]		Roosting likely to occur within area overfly marine area
Sula leucogaster Brown Booby [1022]		Breeding likely to occur within area
Thalasseus bengalensis as Sterna bengalensis Lesser Crested Tern [66546]		Breeding likely to occur within area
Thalasseus bergii as Sterna bergii Greater Crested Tern [83000]		Breeding likely to occur within area
Tringa brevipes as Heteroscelus brevipes Grey-tailed Tattler [851]		Roosting likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
[Tringa stagnatilis](#) Marsh Sandpiper, Little Greenshank [833]		Roosting likely to occur within area overfly marine area
[Xenus cinereus](#) Terek Sandpiper [59300]	Vulnerable	Roosting likely to occur within area overfly marine area
Fish		
[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](#) Yellow-banded Pipefish [66200]		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
[Halicampus brocki](#) Brock's Pipefish [66219]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
Halicampus spinirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophora as Haliichthys taeniophorus Ribboned Pipehorse, Ribboned Pipefish, Ribboned Seadragon [94706]		Species or species habitat may occur within area
Hippichthys cyanospilos Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
[Micrognathus micronotopterus](#) Tidepool Pipefish [66255]		Species or species habitat may occur within area
[Solegnathus hardwickii](#) Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
[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		
[Dugong dugon](#) Dugong [28]		Species or species habitat likely to occur within area
Reptile		
[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	Breeding likely to occur within area
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
[Crocodylus johnstoni](#) Freshwater Crocodile, Johnston's Crocodile, Johnstone's Crocodile [1773]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Hydrelaps darwiniensis Port Darwin Sea Snake, Black-ringed Mangrove Sea Snake [1100]		Species or species habitat may occur within area
Hydrophis atriceps Black-headed Sea Snake, Banded Sea Snake [1101]		Species or species habitat may occur within area
Hydrophis caerulescens Dwarf Sea Snake [1103]		Species or species habitat may occur within area
Hydrophis elegans Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area
Hydrophis hardwickii as Lapemis hardwickii Spine-bellied Sea Snake [93516]		Species or species habitat may occur within area
Hydrophis inornatus Plain Sea Snake [1107]		Species or species habitat may occur within area
Hydrophis kingii as Disteira kingii Spectacled Sea Snake [93511]		Species or species habitat may occur within area
Hydrophis macdowelli as Hydrophis mcdowelli MacDowell's Sea Snake, Small-headed Sea Snake, [75601]		Species or species habitat may occur within area
Hydrophis major as Disteira major Olive-headed Sea Snake [93512]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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 zweifeli as Enhydrina schistosa Australian Beaked Sea Snake [93514]		Species or species habitat may occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding likely to occur within area
Parahydrophis mertoni Arafura Smooth Sea Snake, Northern Mangrove Sea Snake [1090]		Species or species habitat may occur within area

Whales and Other Cetaceans		[Resource Information]
Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat may occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Balaenoptera omurai Omura's Whale [87136]		Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat may occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		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]	Vulnerable	Species or species habitat likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area

Current Scientific Name	Status	Type of Presence
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Australian Marine Parks [Resource Information]

Park Name	Zone & IUCN Categories
Limmen	Habitat Protection Zone (IUCN IV)
Gulf of Carpentaria	National Park Zone (IUCN II)
Gulf of Carpentaria	Special Purpose Zone (Trawl) (IUCN VI)
Gulf of Carpentaria	Special Purpose Zone (Trawl) (IUCN VI)

Habitat Critical to the Survival of Marine Turtles [Resource Information]

Scientific Name	Behaviour	Presence
All year (Jun - Aug)		
Natator depressus Flatback Turtle [59257]	Nesting	Known to occur
Oct - Feb		
Eretmochelys imbricata Hawksbill Turtle [1766]	Nesting	Known to occur
Oct - Mar		
Chelonia mydas Green Turtle [1765]	Nesting	Known to occur

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State
Barranyi (North Island)	National Park	NT
Eight Mile Creek	Fish Habitat Area (A)	QLD
Finucane Island	National Park	QLD
Limmen	National Park	NT
Limmen Bight	Marine Park	NT
Morning Inlet - Bynoe River	Fish Habitat Area (A)	QLD

Protected Area Name	Reserve Type	State
Nassau River	Fish Habitat Area (A)	QLD
Rutland Plains	Nature Refuge	QLD
Staaten-Gilbert	Fish Habitat Area (A)	QLD

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Arnhem Space Centre Operations (Down Range Recovery)	2023/09657		Completed
Blue Carbon Ecosystem Restoration - Research Pilot Project Northern Territory Portion 4319 - Kangaroo Island	2023/09565		Completed
Roper Valley Iron Ore Project, NT	2017/7929		Completed
Controlled action			
Roper Bar Iron Ore Mine and Transport Infrastructure	2012/6242	Controlled Action	Post-Approval
Roper Bar Iron Ore Mine and Transport Infrastructure	2011/6079	Controlled Action	Completed
Not controlled action			
Eastern Leases 2010 Exploration Drilling Program	2010/5455	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
Sewerage Network and Sewerage Treatment Plant	2009/4775	Not Controlled Action	Completed
Referral decision			
Groote Eylandt Offshore Marine Surveys	2010/5643	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
Gulf of Carpentaria basin	North
Gulf of Carpentaria coastal zone	North

Name	Region
Plateaux and saddle north-west of the Wellesley Islands	North
Submerged coral reefs of the Gulf of Carpentaria	North

Biologically Important Areas		[Resource Information]
Scientific Name	Behaviour	Presence
Marine Turtles		
Chelonia mydas Green Turtle [1765]	Foraging	Known to occur
Chelonia mydas Green Turtle [1765]	Reproduction	Likely to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Reproduction	Known to occur
Lepidochelys olivacea Olive Ridley Turtle [1767]	Reproduction	Likely to occur
Natator depressus Flatback Turtle [59257]	Reproduction	Known to occur
Seabirds		
Fregata ariel Lesser Frigatebird [1012]	Reproduction	Known to occur
Onychoprion anaethetus Bridled Tern [82845]	Reproduction	Known to occur
Sterna dougallii Roseate Tern [817]	Reproduction	Known to occur
Sula leucogaster Brown Booby [1022]	Reproduction	Known to occur
Thalasseus bengalensis Lesser Crested Tern [66546]	Reproduction	Known to occur
Thalasseus bergii Crested Tern [83000]	Reproduction	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 is 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 on the contents of this report.

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 point locations and environmental data layers.

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 when time permits.

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 breeding sites; and
- 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: 25-Jun-2026

Summary
Details
Matters of NES
Other Matters Protected by the EPBC Act
Extra Information
Caveat
Acknowledgements

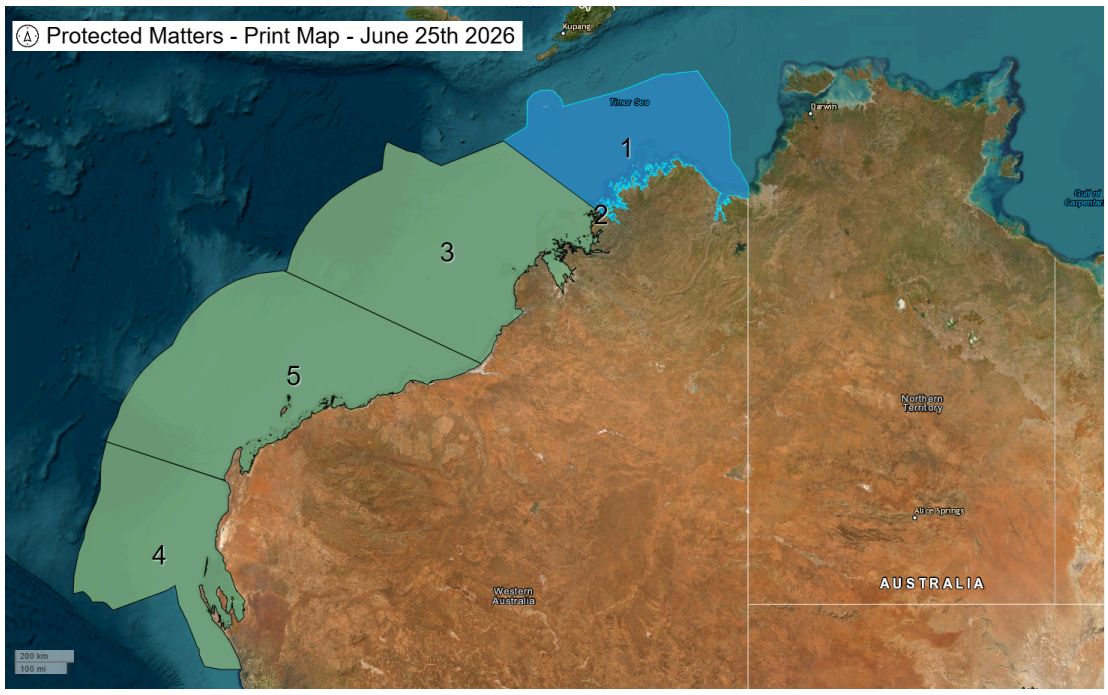


Figure 1: North West Marine Region - North (Part 1)

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.

World Heritage Properties:	None
National Heritage Places:	1
Wetlands of International Importance (Ramsar	2
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	8
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	59
Listed Migratory Species:	69

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	1
Commonwealth Heritage Places:	1
Listed Marine Species:	115
Whales and Other Cetaceans:	28
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	8
Habitat Critical to the Survival of Marine Turtles:	3

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	15
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	116
Key Ecological Features (Marine):	7
Biologically Important Areas:	33
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

National Heritage Places		[Resource Information]
Name	State	Legal Status
Natural		
The West Kimberley	WA	Listed place

Wetlands of International Importance (Ramsar Wetlands)	[Resource Information]
Ramsar Site Name	Proximity
Ashmore reef national nature reserve	Within Ramsar site
Ord river floodplain	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)
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]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Anous tenuirostris melanops		
Australian Lesser Noddy [26000]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Chloebia gouldiae listed as Erythrura gouldiae Gouldian Finch [90091]	Endangered	Species or species habitat likely to occur within area
Erythrotriorchis radiatus Red Goshawk [942]	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 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
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Endangered	Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Papasula abbotti Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area
Pezoporus occidentalis Night Parrot [59350]	Critically 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 likely to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding 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
MAMMAL		

Scientific Name	Threatened Category	Presence Text
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Conilurus penicillatus Brush-tailed Rabbit-rat, Brush-tailed Tree-rat, Pakooma [132]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area
Isoodon auratus auratus Golden Bandicoot (mainland) [66665]	Vulnerable	Species or species habitat likely to occur within area
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area
Mesembriomys gouldii gouldii Black-footed Tree-rat (Kimberley and mainland Northern Territory), Djintamoonga, Manbul [87618]	Endangered	Species or species habitat may occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Breeding likely to occur within area
Petrogale concinna monastria Nabarlek (Kimberley) [87607]	Endangered	Species or species habitat likely to occur within area
Phascogale tapoatafa kimberleyensis Kimberley brush-tailed phascogale, Brush-tailed Phascogale (Kimberley) [88453]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Saccolaimus saccolaimus nudicluniatus		
Bare-rumped Sheath-tailed Bat, Bare-rumped Sheathtail Bat [66889]	Vulnerable	Species or species habitat likely to occur within area
Sousa sahulensis		
Australian Humpback Dolphin [87942]	Vulnerable	Breeding likely to occur within area
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 likely to occur within area
REPTILE		
Acanthophis hawkei		
Plains Death Adder [83821]	Vulnerable	Species or species habitat may occur within area
Aipysurus apraefrontalis		
Short-nosed Sea Snake, Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat likely to occur within area
Aipysurus foliosquama		
Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat may occur within area
Aipysurus fuscus		
Dusky Sea Snake [1119]	Endangered	Species or species habitat likely to occur within area
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding likely 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 [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		
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 likely to occur within area
Glyphis glyphis Speartooth Shark [82453]	Critically Endangered	Species or species habitat likely to occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding likely to occur within area
Pristis pristis Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat likely to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
null		
Balaenoptera omurai Omura's Whale [87136]		Species or species habitat likely to occur within area
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Breeding likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna pacifica Wedge-tailed Shearwater [84292]		Breeding likely to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Breeding likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Foraging, feeding or related behaviour likely to occur within area
Hydroprogne caspia Caspian Tern [808]		Breeding likely to occur within area
Onychoprion anaethetus Bridled Tern [82845]		Breeding likely to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat likely to occur within area
Sterna dougallii Roseate Tern [817]		Breeding likely to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding likely to occur within area
Sula dactylatra Masked Booby [1021]		Breeding likely to occur within area
Sula leucogaster Brown Booby [1022]		Breeding likely to occur within area
Sula sula Red-footed Booby [1023]		Breeding likely to occur within area
Migratory Marine Species		
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

Scientific Name	Threatened Category	Presence Text
Carcharias taurus Grey Nurse Shark [64469]		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	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Dugong dugon Dugong [28]		Breeding likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely 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 likely to occur within area

Scientific Name	Threatened Category	Presence Text
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 likely to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Breeding likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding likely to occur within area
Pristis pristis Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat likely to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Sousa sahulensis as Sousa chinensis Australian Humpback Dolphin [87942]	Vulnerable	Breeding likely 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

Scientific Name	Threatened Category	Presence Text
[Cuculus optatus](#) Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat likely to occur within area
[Hirundo rustica](#) Barn Swallow [662]		Species or species habitat likely to occur within area
[Motacilla cinerea](#) Grey Wagtail [642]		Species or species habitat likely to occur within area
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
[Acrocephalus orientalis](#) Oriental Reed-Warbler [59570]		Species or species habitat likely to occur within area
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat likely to occur within area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
[Calidris canutus](#) Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat may occur within area
[Calidris ruficollis](#) Red-necked Stint [860]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Thalasseus bergii Greater Crested Tern [83000]		Breeding likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		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
Department of Climate Change, Energy, the Environment and Water	
Ashmore Reef National Nature Reserve [CHL_105218]	EXT

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 likely to occur within area overfly marine area
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat likely to occur within area
Anous minutus		
Black Noddy [824]		Breeding likely to occur within area
Anous stolidus		
Common Noddy [825]		Breeding likely to occur within area
Anous tenuirostris melanops		
Australian Lesser Noddy [26000]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Anseranas semipalmata		
Magpie Goose [978]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Ardenna pacifica as Puffinus pacificus Wedge-tailed Shearwater [84292]		Breeding likely 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	Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Calidris ruficollis Red-necked Stint [860]		Species or species habitat likely to occur within area overfly marine area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Cecropis daurica as Hirundo daurica Red-rumped Swallow [80610]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Chalcites osculans as Chrysococcyx osculans		
Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area
Charadrius leschenaultii		
Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius ruficapillus		
Red-capped Plover [881]		Species or species habitat likely to occur within area overfly marine area
Charadrius veredus		
Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area overfly marine area
Chroicocephalus novaehollandiae as Larus novaehollandiae		
Silver Gull [82326]		Breeding likely to occur within area
Fregata ariel		
Lesser Frigatebird, Least Frigatebird [1012]		Breeding likely to occur within area
Fregata minor		
Great Frigatebird, Greater Frigatebird [1013]		Foraging, feeding or related behaviour likely to occur within area
Glareola maldivarum		
Oriental Pratincole [840]		Species or species habitat may occur within area overfly marine area
Haliaeetus leucogaster		
White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Himantopus himantopus		
Pied Stilt, Black-winged Stilt [870]		Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Hirundo rustica Barn Swallow [662]		Species or species habitat likely to occur within area overfly marine area
Hydroprogne caspia as Sterna caspia Caspian Tern [808]		Breeding likely to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Species or species habitat likely to occur within area overfly marine 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 likely to occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Onychoprion anaethetus as Sterna anaethetus Bridled Tern [82845]		Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Pandion haliaetus Osprey [952]		Species or species habitat likely 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]		Species or species habitat likely to 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 Red-tailed Tropicbird [994]		Species or species habitat likely to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely 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
Sterna dougallii Roseate Tern [817]		Breeding likely to occur within area
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Breeding likely to occur within area
Stiltia isabella Australian Pratincole [818]		Species or species habitat likely to occur within area overfly marine area
Sula dactylatra Masked Booby [1021]		Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Sula leucogaster Brown Booby [1022]		Breeding likely to occur within area
Sula sula Red-footed Booby [1023]		Breeding likely to occur within area
Thalasseus bengalensis as Sterna bengalensis Lesser Crested Tern [66546]		Breeding likely to occur within area
Thalasseus bergii as Sterna bergii Greater Crested Tern [83000]		Breeding likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Species or species habitat likely to occur within area overfly marine area
Fish		
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

Scientific Name	Threatened Category	Presence Text
Corythoichthys flavofasciatus Yellow-banded Pipefish [66200]		Species or species habitat may occur within area
Corythoichthys intestinalis Australian Messmate Pipefish, Banded Pipefish [66202]		Species or species habitat may occur within area
Corythoichthys schultzi Schultz's Pipefish [66205]		Species or species habitat may occur within area
Cosmocampus banneri Roughridge Pipefish [66206]		Species or species habitat may occur within area
Doryrhamphus dactyliophorus Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area
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

Scientific Name	Threatened Category	Presence Text
Halicampus spinirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophora as Haliichthys taeniophorus Ribboned Pipehorse, Ribboned Pipefish, Ribboned Seadragon [94706]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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		
Dugong dugon Dugong [28]		Breeding likely 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 foliosquama Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat may occur within area
Aipysurus fuscus Dusky Sea Snake [1119]	Endangered	Species or species habitat likely to 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

Scientific Name	Threatened Category	Presence Text
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Crocodylus johnstoni Freshwater Crocodile, Johnston's Crocodile, Johnstone's Crocodile [1773]		Species or species habitat may occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Emydocephalus annulatus Eastern Turtle-headed Sea Snake [1125]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Hydrelaps darwiniensis Port Darwin Sea Snake, Black-ringed Mangrove Sea Snake [1100]		Species or species habitat may occur within area
Hydrophis atriceps Black-headed Sea Snake, Banded Sea Snake [1101]		Species or species habitat may occur within area
Hydrophis coggeri Cogger's Sea Snake, Black-headed Sea Snake [25925]		Species or species habitat may occur within area
Hydrophis elegans Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area
Hydrophis hardwickii as Lapemis hardwickii Spine-bellied Sea Snake [93516]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hydrophis inornatus Plain Sea Snake [1107]		Species or species habitat may occur within area
Hydrophis kingii as Disteira kingii Spectacled Sea Snake [93511]		Species or species habitat may occur within area
Hydrophis macdowelli as Hydrophis mcdowelli MacDowell's Sea Snake, Small-headed Sea Snake, [75601]		Species or species habitat may occur within area
Hydrophis major as Disteira major Olive-headed Sea Snake [93512]		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 zweifeli as Enhydrina schistosa Australian Beaked Sea Snake [93514]		Species or species habitat may occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding likely to occur within area

Whales and Other Cetaceans		[Resource Information]
Current Scientific Name	Status	Type of Presence
Mammal		
[Balaenoptera borealis](#) Sei Whale [34]	Vulnerable	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 omurai](#) Omura's Whale [87136]		Species or species habitat likely to occur within area
[Balaenoptera physalus](#) Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[Delphinus delphis](#) Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
[Feresa attenuata](#) Pygmy Killer Whale [61]		Species or species habitat may occur within area
[Globicephala macrorhynchus](#) Short-finned Pilot Whale [62]		Species or species habitat may occur within area
[Grampus griseus](#) Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
[Kogia breviceps](#) Pygmy Sperm Whale [57]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
[Kogia sima](#) Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
[Lagenodelphis hosei](#) Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
[Megaptera novaeangliae](#) Humpback Whale [38]		Breeding known to occur within area
[Mesoplodon densirostris](#) Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
[Orcaella heinsohni](#) Australian Snubfin Dolphin [81322]	Vulnerable	Breeding likely 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]	Vulnerable	Breeding likely to occur within area
[Stenella attenuata](#) Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
[Stenella coeruleoalba](#) Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely 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
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
Joseph Bonaparte Gulf	Multiple Use Zone (IUCN VI)
Kimberley	Multiple Use Zone (IUCN VI)
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)
Joseph Bonaparte Gulf	Special Purpose Zone (IUCN VI)
Oceanic Shoals	Special Purpose Zone (Trawl) (IUCN VI)

Habitat Critical to the Survival of Marine Turtles		[Resource Information]
Scientific Name	Behaviour	Presence

Scientific Name	Behaviour	Presence
All year (Jun - Aug)		
Natator depressus		
Flatback Turtle [59257]	Nesting	Known to occur
May - Jul		
Lepidochelys olivacea		
Olive Ridley Turtle [1767]	Nesting	Known to occur
Oct - Mar		
Chelonia mydas		
Green Turtle [1765]	Nesting	Known to occur

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State
Browse Island	Nature Reserve	WA
Lalang-gaddam	Marine Park	WA
Lawley River	National Park	WA
Lesueur Island	Nature Reserve	WA
Low Rocks	Nature Reserve	WA
Mijing	5(1)(h) Reserve	WA
Mitchell River	National Park	WA
Niiwalarra Islands	National Park	WA
North Kimberley	Marine Park	WA
Ord River	Nature Reserve	WA
Parry Lagoons	Nature Reserve	WA
Pelican Island	Nature Reserve	WA
Prince Regent	National Park	WA
Unnamed WA41775	5(1)(h) Reserve	WA
Unnamed WA44677	5(1)(h) Reserve	WA

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Boskalis Cambridge Gulf Marine Sand Sourcing Project	2025/10106		Referral Decision
Deep Water Northwest Shelf 2D Seismic Survey	2007/3260		Completed
Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia West	2024/09826		Completed
Project Crux Cable Lay and Operation	2022/09441		Completed
Project Fitzroy Expansion Offshore Cable Lay	2023/09674		Referral Decision
Puffin Oil wells 7, 8 & 9 development	2005/2336		Completed
Controlled action			
2-D seismic survey Scott Reef	2000/125	Controlled Action	Post-Approval
Bonaparte Liquified Natural Gas Project	2011/6141	Controlled Action	Post-Approval
Conduct an exploration drilling campaign	2010/5718	Controlled Action	Completed
Decommissioning of Challis Oilfield	2003/942	Controlled Action	Post-Approval
Develop Ichthys gas-condensate field permit area W	2006/2767	Controlled Action	Completed
Development of Blacktip Gas Field	2003/1180	Controlled Action	Post-Approval
Development of Browse Basin Gas Fields (Upstream)	2008/4111	Controlled Action	Completed
Ichthys Gas Field, Offshore and onshore processing facilities and subsea pipeline	2008/4208	Controlled Action	Post-Approval
Montara 4, 5, and 6 Oil Production Wells, and Montara 3 Gas Re-Injection Well	2002/755	Controlled Action	Post-Approval
Prelude Floating Liquefied Natural Gas Facility and Gas Field Development	2008/4146	Controlled Action	Post-Approval
PTTEP AA Floating LNG Facility	2011/6025	Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Wuudagu Bauxite Project	2019/8606	Controlled Action	Assessment Approach
Not controlled action			
2D seismic survey, exploration permit NT/P67	2004/1587	Not Controlled Action	Completed
2D Seismic Survey in Permit Areas WA-318-P & WA-319-P, near Cape Londonderry	2004/1687	Not Controlled Action	Completed
3D marine seismic survey in WA 314P and WA 315P	2004/1927	Not Controlled Action	Completed
Adele Trend TQ3D Seismic Survey	2001/252	Not Controlled Action	Completed
AEC International Hydrocarbon Well Puffin 6	2000/36	Not Controlled Action	Completed
Audacious-3 oil drilling well	2003/1042	Not Controlled Action	Completed
Backpacker-1 Offshore Hydrocarbon Exploration Well	2001/300	Not Controlled Action	Completed
Coot-1 hydrocarbon exploration well, Permit Area AC/L2 or AC/L3	2001/296	Not Controlled Action	Completed
Crux-A and Crux-B appraisal wells, Petroleum Permit Area AC/P23	2006/2748	Not Controlled Action	Completed
Crux gas-liquids development in permit AC/P23	2006/3154	Not Controlled Action	Completed
Drilling of 12 Hydrocarbon Exploration Wells, Permit Area WA-371-P	2006/3005	Not Controlled Action	Completed
Drilling of exploration wells, Permit areas WA-301-P to WA-305-P	2002/769	Not Controlled Action	Completed
Drilling of Marina-1 Exploration Well	2007/3586	Not Controlled Action	Completed
Echuca Shoals-2 Exploration of Appraisal Well	2006/3020	Not Controlled Action	Completed
Exploration Drilling in AC/P17, AC/P18 and AC/P24	2001/359	Not Controlled Action	Completed
Exploration Well AC/P23	2001/234	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Kaleidoscope exploration well	2001/182	Not Controlled Action	Completed
Marine Seismic Survey in WA-239-P	2000/24	Not Controlled Action	Completed
Marine Survey for the Australia-ASEAN Power Link AAPL	2020/8714	Not Controlled Action	Completed
Montara-3 Offshore Hydrocarbon Exploration Well Permit Area AC/RL3	2001/489	Not Controlled Action	Completed
Nexus Drilling Program NT-P66	2007/3745	Not Controlled Action	Completed
P30 Hydrocarbon Exploration Well	2001/293	Not Controlled Action	Completed
Project Highclere Geophysical Survey	2021/9023	Not Controlled Action	Completed
Ridges Iron Ore Project	2010/5494	Not Controlled Action	Completed
Saucepan 1 Exploration Well ACP23	2000/2	Not Controlled Action	Completed
Skua and Swift Oilfields	2006/3195	Not Controlled Action	Completed
Strumbo-1 Gas Exploration Well Permit Area WA-288-P	2002/884	Not Controlled Action	Completed
Thresher-1 Well	2000/84	Not Controlled Action	Completed
Not controlled action (particular manner)			
2 (3D) Marine Seismic Surveys	2009/4994	Not Controlled Action (Particular Manner)	Completed
2D and 3D Seismic Survey	2011/6197	Not Controlled Action (Particular Manner)	Post-Approval
2D and 3D Seismic Survey WA-405-P	2009/5104	Not Controlled Action (Particular Manner)	Post-Approval
2D and 3D Seismic Survey WA-405-P	2008/4133	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
2D Marine Seismic Survey	2009/4728	Not Controlled Action (Particular Manner)	Post-Approval
2D marine seismic survey of Braveheart,Kurrajong,Sunshine and Crocodile	2006/2917	Not Controlled Action (Particular Manner)	Post-Approval
2D marine seismic survey within permit area WA-318-P	2007/3879	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic Marine Survey	2001/363	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic survey	2009/5076	Not Controlled Action (Particular Manner)	Post-Approval
2D seismic survey in permit areas WA-274P and WA-281P	2004/1521	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic Survey in WA Permit Area TP/22 and Commonwealth Permit Area WA-280-P	2005/2100	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey	2008/4437	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey, Permit AC/P 23	2005/2364	Not Controlled Action (Particular Manner)	Post-Approval
3D Seismic Survey, Browse Basin, WA	2009/5048	Not Controlled Action (Particular Manner)	Post-Approval
3D Seismic Survey, near Scott Reef, Browse Basin	2005/2126	Not Controlled Action (Particular Manner)	Post-Approval
3D Seismic Survey, petroleum exploration permit AC/P33	2006/2918	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
3D seismic survey of AC/P4, AC/P17 and AC/P24	2006/2857	Not Controlled Action (Particular Manner)	Post-Approval
3D Seismic Survey WA-406-P Bonaparte Basin	2007/3904	Not Controlled Action (Particular Manner)	Post-Approval
AC/P37 3D Seismic Survey Ashmore Cartier	2007/3774	Not Controlled Action (Particular Manner)	Post-Approval
Aurora MC3D Marine Seismic Survey	2010/5510	Not Controlled Action (Particular Manner)	Post-Approval
Bassett 3D Marine Seismic Survey	2010/5538	Not Controlled Action (Particular Manner)	Post-Approval
Bonaparte 2D & 3D marine seismic survey	2011/5962	Not Controlled Action (Particular Manner)	Post-Approval
Bonaparte Seismic and Bathymetric Survey	2012/6295	Not Controlled Action (Particular Manner)	Post-Approval
Braveheart 2D Infill Marine Seismic Survey 100km offshore	2008/4442	Not Controlled Action (Particular Manner)	Post-Approval
Braveheart 2D Marine Seismic Survey	2005/2322	Not Controlled Action (Particular Manner)	Post-Approval
Canis 3D Marine Seismic Survey	2008/4492	Not Controlled Action (Particular Manner)	Post-Approval
Cartier East and Cartier West 3D Marine Seismic Surveys	2009/5230	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Caswell MC3D Marine Seismic Survey	2012/6594	Not Controlled Action (Particular Manner)	Post-Approval
Conduct an exploration drilling campaign	2011/5964	Not Controlled Action (Particular Manner)	Post-Approval
Drilling of Audacious-5 appraisal well	2008/4327	Not Controlled Action (Particular Manner)	Post-Approval
Drilling of Exploration & Appraisal Wells Braveheart-1 & Cornea-3	2009/5160	Not Controlled Action (Particular Manner)	Post-Approval
Drilling of two appraisal wells	2011/5840	Not Controlled Action (Particular Manner)	Post-Approval
Exploration Drilling Campaign	2011/6047	Not Controlled Action (Particular Manner)	Post-Approval
Exploration Drilling Campaign, Browse Basin, WA-341-P, AC-P36 and WA-343-P	2013/6898	Not Controlled Action (Particular Manner)	Post-Approval
Exploration Drilling in Permit Areas WA-402-P & WA-403-P	2010/5297	Not Controlled Action (Particular Manner)	Post-Approval
Exploration Drilling Program - Permit areas - WA-314-P, WA-315-P, WA-398-P.	2008/4064	Not Controlled Action (Particular Manner)	Post-Approval
Fishburn2D Marine Seismic Survey	2012/6659	Not Controlled Action (Particular Manner)	Post-Approval
Floyd 3D and Chisel 3D Seismic Surveys	2011/6220	Not Controlled Action (Particular Manner)	Post-Approval
Gicea 3D Marine Seismic Survey	2008/4389	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Gold 2D Marine Seismic Survey Permit Areas WA375P and WA376P	2009/4698	Not Controlled Action (Particular Manner)	Post-Approval
Ichthys 3D Marine Seismic Survey	2010/5550	Not Controlled Action (Particular Manner)	Post-Approval
Kingtree & Ironstone-1 Exploration Wells	2011/5935	Not Controlled Action (Particular Manner)	Post-Approval
Kraken, Lusca & Asperus 3D Marine Seismic Survey	2013/6730	Not Controlled Action (Particular Manner)	Post-Approval
Malita West 3D Seismic Survey WA-402-P and WA-403-P	2007/3936	Not Controlled Action (Particular Manner)	Post-Approval
Marine Environmental Survey 2012	2012/6310	Not Controlled Action (Particular Manner)	Post-Approval
Nova 3D Seismic Survey	2013/6825	Not Controlled Action (Particular Manner)	Post-Approval
NT/P80 2010 2D Marine Seismic Survey	2010/5487	Not Controlled Action (Particular Manner)	Post-Approval
Octantis 3D Marine Seismic Survey, Permit Area AC/P41 off northern Western Australia	2007/3369	Not Controlled Action (Particular Manner)	Post-Approval
Offshore Exploration Drilling Campaign	2011/6222	Not Controlled Action (Particular Manner)	Post-Approval
Offshore Fibre Optic Cable Network Construction & Operation, Port Hedland WA to Darwin NT	2014/7223	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Offshore Gas Exploration Drilling Campaign	2012/6384	Not Controlled Action (Particular Manner)	Post-Approval
Petrel MC2D Marine Seismic Survey	2010/5368	Not Controlled Action (Particular Manner)	Post-Approval
Sandalford 3D Seismic Survey	2012/6261	Not Controlled Action (Particular Manner)	Post-Approval
Santos Petrel-7 Offshore Appraisal Drilling Programme (Bonaparte Basin)	2011/5934	Not Controlled Action (Particular Manner)	Post-Approval
Schild MC3D Marine Seismic Survey	2012/6373	Not Controlled Action (Particular Manner)	Post-Approval
Schild Phase 11 MC3D Marine Seismic Survey, Browse Basin	2013/6894	Not Controlled Action (Particular Manner)	Post-Approval
Searcher bathymetry & geochemical seismic survey, Brawse Basin,Timor Sea,WA	2013/6980	Not Controlled Action (Particular Manner)	Post-Approval
Sonar and Acoustic Trials	2001/345	Not Controlled Action (Particular Manner)	Post-Approval
Thoar 3D Marine Seismic Survey	2010/5668	Not Controlled Action (Particular Manner)	Post-Approval
Tiffany 3D Seismic Survey	2010/5339	Not Controlled Action (Particular Manner)	Post-Approval
Tow West Atlas wreck from present location to boundary of EEZ	2010/5652	Not Controlled Action (Particular Manner)	Post-Approval
Vampire 2D Non Exclusive Seismic Survey, WA	2010/5543	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval
Zeppelin 3D Seismic Survey	2011/6148	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
2D Marine Seismic Survey	2008/4623	Referral Decision	Completed
BRSN08 3D Marine Seismic Survey	2008/4582	Referral Decision	Completed
Nova 3D Seismic Survey, WA 442-NT/P81, Joseph Bonaparte Gulf	2013/6820	Referral Decision	Completed
Puffin South-West Development of Oil Reserves	2007/3834	Referral Decision	Completed
Ridges Iron Ore Project	2010/5351	Referral Decision	Completed
Seismic Data Acquisition, Browse Basin	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
Ancient coastline at 125 m depth contour	North-west
Ashmore Reef and Cartier Island and surrounding Commonwealth waters	North-west
Carbonate bank and terrace system of the Sahul Shelf	North-west
Continental Slope Demersal Fish Communities	North-west
Pinnacles of the Bonaparte Basin	North-west
Pinnacles of the Bonaparte Basin	North
Seringapatam Reef and Commonwealth waters in the Scott Reef Complex	North-west

Biologically Important Areas		[Resource Information]
Scientific Name	Behaviour	Presence
Dolphins		
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Foraging	Known to occur
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Reproduction	Known to occur
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Resting	Known to occur
Sousa sahulensis Australian Humpback Dolphin [87942]	Foraging	Likely to occur
Sousa sahulensis Australian Humpback Dolphin [87942]	Reproduction	Likely to occur
Tursiops aduncus Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Foraging	Known to occur
Tursiops aduncus Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Reproduction	Known to occur
Dugong		
Dugong dugon Dugong [28]	Foraging	Known to occur
Dugong dugon Dugong [28]	Reproduction	Known to occur
Marine Turtles		
Caretta caretta Loggerhead Turtle [1763]	Foraging	Known to occur
Chelonia mydas Green Turtle [1765]	Foraging	Known to occur
Chelonia mydas Green Turtle [1765]	Reproduction	Likely to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Foraging	Likely to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Reproduction	Known to occur

Scientific Name	Behaviour	Presence
Lepidochelys olivacea Olive Ridley Turtle [1767]	Foraging	Known to occur
Natator depressus Flatback Turtle [59257]	Foraging	Known to occur
Natator depressus Flatback Turtle [59257]	Reproduction	Known to occur
Seabirds		
Ardenna pacifica Wedge-tailed Shearwater [84292]	Reproduction	Known to occur
Fregata ariel Lesser Frigatebird [1012]	Reproduction	Known to occur
Fregata minor Greater Frigatebird [1013]	Reproduction	Known to occur
Phaethon lepturus White-tailed Tropicbird [1014]	Reproduction	Known to occur
Sterna dougallii Roseate Tern [817]	Reproduction	Known to occur
Sternula albifrons sinensis Little Tern [82850]	Reproduction	Known to occur
Sternula albifrons sinensis Little Tern [82850]	Resting	Known to occur
Sula leucogaster Brown Booby [1022]	Reproduction	Known to occur
Sula sula Red-footed Booby [1023]	Reproduction	Known to occur
Thalasseus bengalensis Lesser Crested Tern [66546]	Reproduction	Known to occur
Sharks		
Rhincodon typus Whale Shark [66680]	Foraging	Known to occur

Scientific Name	Behaviour	Presence
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging	Likely to be present
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Migration	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Migration	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Reproduction	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Resting	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 is 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 on the contents of this report.

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 point locations and environmental data layers.

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 when time permits.

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 breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

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-Office of Environment and Heritage, New South Wales
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-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
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-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

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Please feel free to provide feedback via the Contact us page.

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 25-Jun-2026

Summary

Details

- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat

Acknowledgements

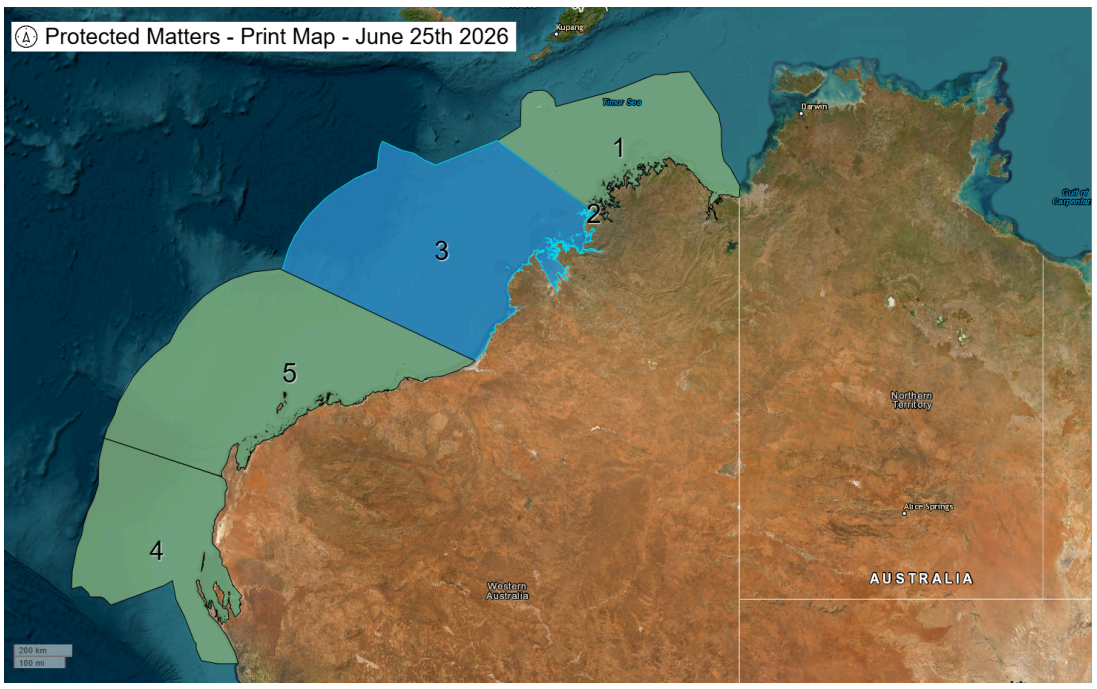


Figure 1: North West Marine Region - North Central (Part 2)

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.

World Heritage Properties:	None
National Heritage Places:	1
Wetlands of International Importance (Ramsar	2
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	9
Listed Threatened Ecological Communities:	1
Listed Threatened Species:	63
Listed Migratory Species:	85

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	47
Commonwealth Heritage Places:	3
Listed Marine Species:	134
Whales and Other Cetaceans:	30
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	11
Habitat Critical to the Survival of Marine Turtles:	3

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	29
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	90
Key Ecological Features (Marine):	5
Biologically Important Areas:	38
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

National Heritage Places		[Resource Information]
Name	State	Legal Status
Natural		
The West Kimberley	WA	Listed place

Wetlands of International Importance (Ramsar Wetlands)	[Resource Information]
Ramsar Site Name	Proximity
Eighty-mile beach	Within Ramsar site
Roebuck bay	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)
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 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
Monsoon vine thickets on the coastal sand dunes of Dampier Peninsula	Endangered	Community likely to occur within area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting likely to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting likely to occur within area
Chloebia gouldiae listed as Erythrura gouldiae Gouldian Finch [90091]	Endangered	Species or species habitat likely to occur within area
Erythrotriorchis radiatus Red Goshawk [942]	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

Scientific Name	Threatened Category	Presence Text
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
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Endangered	Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Papasula abbotti Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area
Pezoporus occidentalis Night Parrot [59350]	Critically Endangered	Species or species habitat may occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Phaethon rubricauda westralis Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird [91824]	Endangered	Breeding likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting likely to occur within area
Polytelis alexandrae Princess Parrot, Alexandra's Parrot [758]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding 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
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Roosting likely to occur within area
MAMMAL		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area
Isoodon auratus auratus Golden Bandicoot (mainland) [66665]	Vulnerable	Species or species habitat likely to occur within area
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Macrotis lagotis Greater Bilby [282]	Vulnerable	Species or species habitat likely to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Breeding likely to occur within area
Petrogale concinna monastria Nabarlek (Kimberley) [87607]	Endangered	Species or species habitat likely to occur within area
Phascogale tapoatafa kimberleyensis Kimberley brush-tailed phascogale, Brush-tailed Phascogale (Kimberley) [88453]	Vulnerable	Species or species habitat likely to occur within area
Saccolaimus saccolaimus nudicluniatus Bare-rumped Sheath-tailed Bat, Bare-rumped Sheathtail Bat [66889]	Vulnerable	Species or species habitat likely to occur within area
Sousa sahulensis Australian Humpback Dolphin [87942]	Vulnerable	Breeding likely to occur within area
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		
Seringia exastia Fringed Fire-bush [88920]	Critically Endangered	Species or species habitat may 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 foliosquama Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Aipysurus fuscus Dusky Sea Snake [1119]	Endangered	Species or species habitat likely to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area
Liopholis kintorei Great Desert Skink, Tjakura, Warrarna, Mulyamiji, Tjalapa, Nampu [83160]	Vulnerable	Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding likely 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 [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		
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Glyphis garricki Northern River Shark, New Guinea River Shark [82454]	Endangered	Species or species habitat likely to occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding likely to occur within area
Pristis pristis Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat likely to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
null		
Balaenoptera omurai Omura's Whale [87136]		Species or species habitat likely to occur within area
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Foraging, feeding or related behaviour likely to occur within area
Hydroprogne caspia Caspian Tern [808]		Breeding likely to occur within area
Onychoprion anaethetus Bridled Tern [82845]		Breeding likely to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat likely to occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat likely to occur within area
Sterna dougallii Roseate Tern [817]		Breeding likely to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding likely to occur within area
Sula dactylatra Masked Booby [1021]		Breeding likely to occur within area
Sula leucogaster Brown Booby [1022]		Breeding likely to occur within area
Sula sula Red-footed Booby [1023]		Breeding likely to occur within area
Migratory Marine Species		
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

Scientific Name	Threatened Category	Presence Text
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
Carcharias taurus Grey Nurse Shark [64469]		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	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Dugong dugon Dugong [28]		Foraging, feeding or related behaviour likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely 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 likely 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 likely to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Breeding likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding likely to occur within area
Pristis pristis Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Pristis zijsron		
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Sousa sahulensis as Sousa chinensis		
Australian Humpback Dolphin [87942]	Vulnerable	Breeding likely 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 may occur within area
Hirundo rustica		
Barn Swallow [662]		Species or species habitat likely to occur within area
Motacilla cinerea		
Grey Wagtail [642]		Species or species habitat likely to occur within area
Motacilla flava		
Yellow Wagtail [644]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
Acrocephalus orientalis		
Oriental Reed-Warbler [59570]		Species or species habitat may occur within area
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting likely to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
Calidris alba Sanderling [875]		Roosting likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area
Calidris falcinellus as Limicola falcinellus Broad-billed Sandpiper [91731]		Roosting likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area
Calidris pugnax as Philomachus pugnax Ruff [91256]		Roosting likely to occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting likely to occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting likely to occur within area
Charadrius bicinctus Double-banded Plover [895]		Roosting likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting likely to occur within area

Scientific Name	Threatened Category	Presence Text
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Roosting likely to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Glareola maldivarum Oriental Pratincole [840]		Roosting likely to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Numenius phaeopus Whimbrel [849]		Roosting likely to occur within area
Pandion haliaetus Osprey [952]		Breeding likely to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalasseus bergii Greater Crested Tern [83000]		Breeding likely to occur within area
Tringa brevipes Grey-tailed Tattler [851]		Roosting likely to occur within area
Tringa glareola Wood Sandpiper [829]		Roosting likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting likely to occur within area
Tringa totanus Common Redshank, Redshank [835]		Roosting likely to occur within area
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Roosting 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
Airservices Australia	
Lot 43 P170055 [AGPR141]	WA
Australian Broadcasting Corporation	
Lot 32 D100296 [AGPR209]	WA
Bureau of Meteorology	
Lot 146 P023266 [AGPR5860]	WA
Lot 2163 P216952 [AGPR5858]	WA
Department of Agriculture, Fisheries and Forestry	
Lot 2275 P217326 [AGPR5881]	WA
Lot 2279 P217326 [AGPR5880]	WA
Department of Climate Change, Energy, the Environment and Water	

Commonwealth Land Name	State
Mermaid Reef - Rowley Shoals [CHL_105255]	WA
Scott Reef and Surrounds - Commonwealth Area [CHL_105480]	EXT
Yampi Defence Area [CHL_105418]	WA
Department of Defence	
ANC TS BROOME - Broome [DD_0130]	WA
Broome Training Depot [AGPR4286]	WA
Broome Training Depot [AGPR4285]	WA
Broome Training Depot [DD_1528]	WA
Derby Training Depot [DD_0696]	WA
Lot 655 P174895 [AGPR4397]	WA
Yampi Sound Training Area [DD_0697]	WA
Yampi Training Ground [AGPR4459]	WA
Department of Home Affairs	
Lot 202 P023724 [AGPR6110]	WA
Lot 257 P069434 [AGPR6092]	WA
Lot 532 DP 72758 [AGPR6095]	WA
Lot637 DP37858 [AGPR6096]	WA
Lot 812 P047361 [AGPR6111]	WA
Lot 823 P044086 [AGPR6108]	WA
Lot 824 P044086 [AGPR6109]	WA
National Indigenous Australians Agency	
Lot 1151 P215280 [AGPR6204]	WA
Lot 1239 P216847 [AGPR6203]	WA
Lot 129 P060227 [AGPR6206]	WA
Lot 132 P060227 [AGPR6208]	WA
Lot 1 S066584 [AGPR6207]	WA
Lot 200 P062535 [AGPR6192]	WA
Lot 2191 P217084 [AGPR6195]	WA

Commonwealth Land Name	State
Lot 223 P071424 [AGPR6202]	WA
Lot 2304 P217326 [AGPR6194]	WA
Lot 2540 P217611 [AGPR6198]	WA
Lot 2542 P217611 [AGPR6197]	WA
Lot 2554 P217611 [AGPR6199]	WA
Lot 2580 P217611 [AGPR6196]	WA
Lot 2873 P218501 [AGPR6193]	WA
Lot 2879 P218503 [AGPR6201]	WA
Lot 325 P024195 [AGPR6210]	WA
Lot 3 S057609 [AGPR6191]	WA
Lot 67 P222187 [AGPR6241]	WA
Lot 7 S061844 [AGPR6200]	WA
Lot 864 P059296 [AGPR6211]	WA
Services Australia	
Lot 1247 P216847 [AGPR6042]	WA
Lot 256 P024193 [AGPR6043]	WA
Lot 69 P015330 [AGPR6041]	WA

Commonwealth Heritage Places [Resource Information]

Name	State	Status
Natural		
Mermaid Reef - Rowley Shoals	WA	Listed place
Scott Reef and Surrounds - Commonwealth Area	EXT	Listed place
Yampi Defence Area	WA	Listed place

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
Bird		
Acrocephalus orientalis Oriental Reed-Warbler [59570]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
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]	Vulnerable	Roosting likely 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	Species or species habitat likely to occur within area
Calidris alba Sanderling [875]		Roosting likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Calidris falcinellus as Limicola falcinellus Broad-billed Sandpiper [91731]		Roosting likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area overfly marine area
Calidris pugnax as Philomachus pugnax Ruff [91256]		Roosting likely to occur within area overfly marine area
Calidris ruficollis Red-necked Stint [860]		Roosting likely to occur within area overfly marine area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting likely to occur within area overfly marine area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Cecropis daurica as Hirundo daurica Red-rumped Swallow [80610]		Species or species habitat may occur within area overfly marine area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area
Charadrius bicinctus Double-banded Plover [895]		Roosting likely to occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting likely to occur within area

Scientific Name	Threatened Category	Presence Text
Charadrius ruficapillus Red-capped Plover [881]		Roosting likely to occur within area overfly marine area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Roosting likely to occur within area overfly marine area
Chroicocephalus novaehollandiae as Larus novaehollandiae Silver Gull [82326]		Breeding likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Breeding likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Foraging, feeding or related behaviour likely to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area
Glareola maldivarum Oriental Pratincole [840]		Roosting likely to occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Roosting likely to occur within area overfly marine area
Hirundo rustica Barn Swallow [662]		Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Hydroprogne caspia as Sterna caspia Caspian Tern [808]		Breeding likely to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting likely to occur within area overfly marine 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 likely to occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely 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 likely to occur within area
Onychoprion anaethetus as Sterna anaethetus Bridled Tern [82845]		Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Onychoprion fuscatus as Sterna fuscata Sooty Tern [90682]		Breeding likely to occur within area
Pandion haliaetus Osprey [952]		Breeding likely 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]		Species or species habitat likely to occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat likely to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting likely to occur within area overfly marine area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Roosting likely 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
Sterna dougallii Roseate Tern [817]		Breeding likely to occur within area
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Sternula nereis as Sterna nereis Fairy Tern [82949]		Breeding likely to occur within area
Stiltia isabella Australian Pratincole [818]		Roosting likely to occur within area overfly marine area
Sula dactylatra Masked Booby [1021]		Breeding likely to occur within area
Sula leucogaster Brown Booby [1022]		Breeding likely to occur within area
Sula sula Red-footed Booby [1023]		Breeding likely to occur within area
Thalasseus bengalensis as Sterna bengalensis Lesser Crested Tern [66546]		Breeding likely to occur within area
Thalasseus bergii as Sterna bergii Greater Crested Tern [83000]		Breeding likely to occur within area
Tringa brevipes as Heteroscelus brevipes Grey-tailed Tattler [851]		Roosting likely to occur within area
Tringa glareola Wood Sandpiper [829]		Roosting likely to occur within area overfly marine area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting likely to occur within area overfly marine area
Tringa totanus Common Redshank, Redshank [835]		Roosting likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
[Xenus cinereus](#) Terek Sandpiper [59300]	Vulnerable	Roosting likely to occur within area overfly marine area
Fish		
[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](#) Yellow-banded Pipefish [66200]		Species or species habitat may occur within area
[Corythoichthys intestinalis](#) Australian Messmate Pipefish, Banded Pipefish [66202]		Species or species habitat may occur within area
[Corythoichthys schultzi](#) Schultz's Pipefish [66205]		Species or species habitat may occur within area
[Cosmocampus banneri](#) Roughridge Pipefish [66206]		Species or species habitat may occur within area
[Doryrhamphus dactyliophorus](#) Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area
Halicampus dunckeri Red-hair Pipefish, Duncker's Pipefish [66220]		Species or species habitat may occur within area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
Halicampus nitidus Glittering Pipefish [66224]		Species or species habitat may occur within area
Halicampus spinirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophora as Haliichthys taeniophorus Ribboned Pipehorse, Ribboned Pipefish, Ribboned Seadragon [94706]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Trachyrhamphus longirostris Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Mammal		
Dugong dugon Dugong [28]		Foraging, feeding or related behaviour likely 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 foliosquama Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat may occur within area
Aipysurus fuscus Dusky Sea Snake [1119]	Endangered	Species or species habitat likely to 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
Aipysurus tenuis Brown-lined Sea Snake, Mjoberg's Sea Snake [1121]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Crocodylus johnstoni Freshwater Crocodile, Johnston's Crocodile, Johnstone's Crocodile [1773]		Species or species habitat may occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Emydocephalus annulatus Eastern Turtle-headed Sea Snake [1125]		Species or species habitat may occur within area
Ephalophis greyae as Ephalophis greyi Mangrove Sea Snake [93738]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Hydrelaps darwiniensis Port Darwin Sea Snake, Black-ringed Mangrove Sea Snake [1100]		Species or species habitat may occur within area
Hydrophis coggeri Cogger's Sea Snake, Black-headed Sea Snake [25925]		Species or species habitat may occur within area
Hydrophis czeblukovi Fine-spined Sea Snake [59233]		Species or species habitat may occur within area
Hydrophis elegans Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area
Hydrophis hardwickii as Lapemis hardwickii Spine-bellied Sea Snake [93516]		Species or species habitat may occur within area
Hydrophis kingii as Disteira kingii Spectacled Sea Snake [93511]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hydrophis macdowelli as Hydrophis mcdowelli		
MacDowell's Sea Snake, Small-headed Sea Snake, [75601]		Species or species habitat may occur within area
Hydrophis major as Disteira major		
Olive-headed Sea Snake [93512]		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 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 zweifeli as Enhydrina schistosa		
Australian Beaked Sea Snake [93514]		Species or species habitat may occur within area
Lepidochelys olivacea		
Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Breeding likely to occur within area

Whales and Other Cetaceans		[Resource Information]
Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	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

Current Scientific Name	Status	Type of Presence
[Balaenoptera musculus](#) Blue Whale [36]	Endangered	Migration route known to occur within area
[Balaenoptera omurai](#) Omura's Whale [87136]		Species or species habitat likely to occur within area
[Balaenoptera physalus](#) Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[Delphinus delphis](#) Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
[Feresa attenuata](#) Pygmy Killer Whale [61]		Species or species habitat may occur within area
[Globicephala macrorhynchus](#) Short-finned Pilot Whale [62]		Species or species habitat may occur within area
[Grampus griseus](#) Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
[Indopacetus pacificus](#) Longman's Beaked Whale [72]		Species or species habitat may occur within area
[Kogia breviceps](#) Pygmy Sperm Whale [57]		Species or species habitat may occur within area
[Kogia sima](#) Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
[Lagenodelphis hosei](#) Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Megaptera novaeangliae Humpback Whale [38]		Breeding known to occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Mesoplodon ginkgodens Gingko-toothed Beaked Whale, Gingko-toothed Whale, Gingko Beaked Whale [59564]		Species or species habitat may occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Breeding likely 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]	Vulnerable	Breeding likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
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 likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks [Resource Information]

Park Name	Zone & IUCN Categories
Kimberley	Habitat Protection Zone (IUCN IV)
Kimberley	Habitat Protection Zone (IUCN IV)
Argo-Rowley Terrace	Multiple Use Zone (IUCN VI)
Argo-Rowley Terrace	Multiple Use Zone (IUCN VI)
Eighty Mile Beach	Multiple Use Zone (IUCN VI)
Kimberley	Multiple Use Zone (IUCN VI)
Roebuck	Multiple Use Zone (IUCN VI)
Argo-Rowley Terrace	National Park Zone (IUCN II)
Kimberley	National Park Zone (IUCN II)
Mermaid Reef	National Park Zone (IUCN II)
Argo-Rowley Terrace	Special Purpose Zone (Trawl) (IUCN VI)

Habitat Critical to the Survival of Marine Turtles [Resource Information]

Scientific Name	Behaviour	Presence
All year (Jun - Aug)		
Natator depressus		
Flatback Turtle [59257]	Nesting	Known to occur
May - Jul		
Lepidochelys olivacea		
Olive Ridley Turtle [1767]	Nesting	Known to occur
Oct - Mar		
Chelonia mydas		
Green Turtle [1765]	Nesting	Known to occur

Extra Information

State and Territory Reserves		[Resource Information]
Protected Area Name	Reserve Type	State
Adele Island	Nature Reserve	WA
Bardi Jawi Gaarra	Marine Park	WA
Broome Bird Observatory	5(1)(h) Reserve	WA
Broome Wildlife Centre	5(1)(h) Reserve	WA
Coulomb Point	Nature Reserve	WA
Eighty Mile Beach	Marine Park	WA
Jinmarnkur	Conservation Park	WA
Jinmarnkur Kulja	Nature Reserve	WA
Lacepede Islands	Nature Reserve	WA
Lalang-gaddam	Marine Park	WA
Mayala	Marine Park	WA
North Kimberley	Marine Park	WA
Rowley Shoals	Marine Park	WA
Scott Reef	Nature Reserve	WA
Swan Island	Nature Reserve	WA
Tanner Island	Nature Reserve	WA
Unnamed WA28968	5(1)(h) Reserve	WA

Protected Area Name	Reserve Type	State
Unnamed WA37168	5(1)(h) Reserve	WA
Unnamed WA44669	5(1)(h) Reserve	WA
Unnamed WA44673	5(1)(h) Reserve	WA
Unnamed WA51105	5(1)(h) Reserve	WA
Unnamed WA51162	5(1)(h) Reserve	WA
Unnamed WA51497	5(1)(h) Reserve	WA
Unnamed WA51583	5(1)(h) Reserve	WA
Unnamed WA51617	5(1)(h) Reserve	WA
Unnamed WA51932	5(1)(h) Reserve	WA
Unnamed WA52354	5(1)(h) Reserve	WA
Unnamed WA53015	Nature Reserve	WA
Yawuru Nagulagun / Roebuck Bay	Marine Park	WA

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
2 geotechnical surveys - preliminary and final	2006/2886		Completed
Boskalis Cambridge Gulf Marine Sand Sourcing Project	2025/10106		Referral Decision
Broome Wharf Extension Project	2024/09823		Completed
Browse Carbon Capture and Storage Project	2024/10028		Referral Decision
Browse to North West Shelf Development, Indian Ocean, WA	2018/8319		Approval
Cockatoo Island Multi-User Supply Base, WA	2017/7986		Assessment
Deep Water Northwest Shelf 2D Seismic Survey	2007/3260		Completed
Derby Tidal Power Project	2010/5544		Assessment
Koolan Island Operations	2022/09392		Assessment

Title of referral	Reference	Referral Outcome	Assessment Status
Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia West	2024/09826		Completed
Ocean Barramundi Expansion Project	2022/09272		Assessment
Controlled action			
2-D seismic survey Scott Reef	2000/125	Controlled Action	Post-Approval
Broome Boating Facility	2021/9098	Controlled Action	Referral Decision
Browse FLNG Development, Commonwealth Waters	2013/7079	Controlled Action	Post-Approval
Conduct an exploration drilling campaign	2010/5718	Controlled Action	Completed
Derby Tidal Power Proposal	2001/398	Controlled Action	Completed
Develop Ichthys gas-condensate field permit area W	2006/2767	Controlled Action	Completed
Development of Browse Basin Gas Fields (Upstream)	2008/4111	Controlled Action	Completed
Duchess Paradise Project	2011/6033	Controlled Action	Completed
Great Northern Pipeline - 630 km buried gas pipeline	2009/5257	Controlled Action	Completed
Ichthys Gas Field, Offshore and onshore processing facilities and subsea pipeline	2008/4208	Controlled Action	Post-Approval
Iron ore mine	2006/2522	Controlled Action	Post-Approval
Pluton Irvine Island Iron Ore Project	2011/6064	Controlled Action	Proposed Decision
Shamrock Station Irrigation Project, west Kimberley region, WA	2017/8004	Controlled Action	Post-Approval
Torosa South Initial Appraisal Drilling	2007/3500	Controlled Action	Completed
Not controlled action			
3D marine seismic survey in WA 314P and WA 315P	2004/1927	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Adele Trend TQ3D Seismic Survey	2001/252	Not Controlled Action	Completed
Aquaculture - Barramundi grow out, Yampi Sound	2005/2476	Not Controlled Action	Completed
Drilling of exploration wells, Permit areas WA-301-P to WA-305-P	2002/769	Not Controlled Action	Completed
Establish a 4m wide trace line along the road allignment for James Price Point	2010/5682	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
Kimberley Marine Offloading Facility	2020/8736	Not Controlled Action	Completed
Kimberley Multi-commodity Exploration Programme, WA	2013/6839	Not Controlled Action	Completed
Koolan Island Mine - Reconstruction of seawall and capital dewatering of mine pit,130km northwest of	2016/7848	Not Controlled Action	Completed
Marine Seismic Survey in WA-239-P	2000/24	Not Controlled Action	Completed
Port of Broome Channel Optimisation Project, West Roebuck Bay, WA	2018/8162	Not Controlled Action	Completed
Power Station Upgrade	2001/357	Not Controlled Action	Completed
Power Station Upgrade (South Port Site)	2001/414	Not Controlled Action	Completed
WA-295-P Kerr-McGee Exploration Wells	2001/152	Not Controlled Action	Completed
Wastewater Treatment Plant	2008/4545	Not Controlled Action	Completed
Not controlled action (particular manner)			
2D seismic survey in permit areas WA-274P and WA-281P	2004/1521	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey (WA-482-P, WA-363-P), WA	2013/6761	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
3D marine seismic Survey - Maxima 3D MSS	2006/2945	Not Controlled Action (Particular Manner)	Post-Approval
3D Seismic Survey, Browse Basin, WA	2009/5048	Not Controlled Action (Particular Manner)	Post-Approval
3D Seismic Survey, near Scott Reef, Browse Basin	2005/2126	Not Controlled Action (Particular Manner)	Post-Approval
Acacia East Pit Cutback Mining Project,northern Kimberley, WA	2013/6752	Not Controlled Action (Particular Manner)	Post-Approval
Aurora MC3D Marine Seismic Survey	2010/5510	Not Controlled Action (Particular Manner)	Post-Approval
Braveheart 2D Infill Marine Seismic Survey 100km offshore	2008/4442	Not Controlled Action (Particular Manner)	Post-Approval
Braveheart 2D Marine Seismic Survey	2005/2322	Not Controlled Action (Particular Manner)	Post-Approval
Caswell MC3D Marine Seismic Survey	2012/6594	Not Controlled Action (Particular Manner)	Post-Approval
Conduct an exploration drilling campaign	2011/5964	Not Controlled Action (Particular Manner)	Post-Approval
Construction of a 43km long sealed access road to the Browse LNG precinct	2011/5852	Not Controlled Action (Particular Manner)	Post-Approval
Effect of marine seismic sounds to demersal fish and pearl oysters, north-west WA	2018/8169	Not Controlled Action (Particular Manner)	Post-Approval
Endurance 3D Marine Seismic Data Acquisition Survey	2007/3667	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Establishment of AQIS washdown facility, logistics support base and ancillary businesses	2012/6364	Not Controlled Action (Particular Manner)	Post-Approval
Exploration Drilling Program - Permit areas - WA-314-P, WA-315-P, WA-398-P.	2008/4064	Not Controlled Action (Particular Manner)	Post-Approval
Geoscience Australia - Marine survey in Browse Basin to acquire data to assist assessment of CO2 sto	2013/6747	Not Controlled Action (Particular Manner)	Post-Approval
Gigas 2D Pilot Ocean Bottom Cable Marine Seismic Survey	2007/3839	Not Controlled Action (Particular Manner)	Post-Approval
Ichthys 3D Marine Seismic Survey	2010/5550	Not Controlled Action (Particular Manner)	Post-Approval
Kingtree & Ironstone-1 Exploration Wells	2011/5935	Not Controlled Action (Particular Manner)	Post-Approval
Klimt 2D Marine Seismic Survey	2007/3856	Not Controlled Action (Particular Manner)	Post-Approval
Koolama 2D Seismic Survey Dampier Basin	2010/5420	Not Controlled Action (Particular Manner)	Post-Approval
Kraken, Lusca & Asperus 3D Marine Seismic Survey	2013/6730	Not Controlled Action (Particular Manner)	Post-Approval
Mariner Non-Exclusive 2D Seismic Survey	2011/6172	Not Controlled Action (Particular Manner)	Post-Approval
Offshore Canning Multi Client 2D Marine Seismic Survey	2010/5393	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Offshore Exploration Drilling Campaign	2011/6222	Not Controlled Action (Particular Manner)	Post-Approval
Offshore Fibre Optic Cable Network Construction & Operation, Port Hedland WA to Darwin NT	2014/7223	Not Controlled Action (Particular Manner)	Post-Approval
Offshore Gas Exploration Drilling Campaign	2012/6384	Not Controlled Action (Particular Manner)	Post-Approval
Outer Canning exploration drilling program off NW coast of WA	2012/6618	Not Controlled Action (Particular Manner)	Post-Approval
Pilot Appraisal Well - Torosa South 1	2008/3991	Not Controlled Action (Particular Manner)	Post-Approval
Repsol 3d & 2D Marine Seismic Survey	2012/6658	Not Controlled Action (Particular Manner)	Post-Approval
Rosebud 3D Marine Seismic Survey in WA-30-R and TR/5	2012/6493	Not Controlled Action (Particular Manner)	Post-Approval
Schild MC3D Marine Seismic Survey	2012/6373	Not Controlled Action (Particular Manner)	Post-Approval
Schild Phase 11 MC3D Marine Seismic Survey, Browse Basin	2013/6894	Not Controlled Action (Particular Manner)	Post-Approval
Scott Reef Seismic Research	2006/2647	Not Controlled Action (Particular Manner)	Post-Approval
Torosa-5 Apraisal Well, WA-30-R	2008/4430	Not Controlled Action (Particular Manner)	Post-Approval
Tridacna 3D Ocean Bottom Cable Marine Seismic Survey	2011/5959	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Vampire 2D Non Exclusive Seismic Survey, WA	2010/5543	Not Controlled Action (Particular Manner)	Post-Approval
Veritas Voyager 2D Marine Seismic Survey	2009/5151	Not Controlled Action (Particular Manner)	Post-Approval
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval
Woodside Southern Browse 3D Seismic Survey, WA	2007/3534	Not Controlled Action (Particular Manner)	Post-Approval
Zeemeermin MC3D seismic survey, Browse Basin, Offshore WA	2009/5023	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
Aurora extension MC3D Marine Seismic Survey	2011/5887	Referral Decision	Completed
BRSN08 3D Marine Seismic Survey	2008/4582	Referral Decision	Completed
Experimental Study of Behavioural and Physiological Impact on Fish of Seismic Ex	2006/2625	Referral Decision	Completed
Field efficacy trial of the Hisstory bait for feral cats, at Yampi Sound Defence Training Area, Kimb	2017/7977	Referral Decision	Completed
Kimberley Multi-commodity Exploration Program	2013/6780	Referral Decision	Completed
Pilot Appraisal Well - Torosa South-1	2008/3985	Referral Decision	Completed
Seismic Data Acquisition, Browse Basin	2010/5475	Referral Decision	Completed
Tidal Power Generation Turbine	2009/5235	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
Ancient coastline at 125 m depth contour	North-west
Canyons linking the Argo Abyssal Plain with the Scott Plateau	North-west
Continental Slope Demersal Fish Communities	North-west
Mermaid Reef and Commonwealth waters surrounding Rowley Shoals	North-west
Seringapatam Reef and Commonwealth waters in the Scott Reef Complex	North-west

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence
Dolphins		
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Foraging	Known to occur
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Reproduction	Known to occur
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Resting	Known to occur
Sousa sahulensis Australian Humpback Dolphin [87942]	Foraging	Likely to occur
Sousa sahulensis Australian Humpback Dolphin [87942]	Reproduction	Likely to occur
Tursiops aduncus Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Foraging	Known to occur
Tursiops aduncus Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Migration	Known to occur
Tursiops aduncus Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Reproduction	Known to occur
Dugong		
Dugong dugon Dugong [28]	Foraging	Known to occur

Scientific Name	Behaviour	Presence
Dugong dugon Dugong [28]	Migration	Known to occur
Marine Turtles		
Caretta caretta Loggerhead Turtle [1763]	Foraging	Known to occur
Chelonia mydas Green Turtle [1765]	Foraging	Known to occur
Chelonia mydas Green Turtle [1765]	Reproduction	Likely to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Reproduction	Known to occur
Natator depressus Flatback Turtle [59257]	Foraging	Known to occur
Natator depressus Flatback Turtle [59257]	Reproduction	Known to occur
River shark		
Pristis clavata Dwarf Sawfish [68447]	Foraging	Known to occur
Pristis clavata Dwarf Sawfish [68447]	Reproduction	Known to occur
Pristis pristis Largetooth Sawfish [60756]	Foraging	Known to occur
Pristis pristis Largetooth Sawfish [60756]	Reproduction	Known to occur
Pristis zijsron Green Sawfish [68442]	Foraging	Known to occur
Pristis zijsron Green Sawfish [68442]	Reproduction	Known to occur
Seabirds		
Fregata ariel Lesser Frigatebird [1012]	Reproduction	Known to occur

Scientific Name	Behaviour	Presence
Fregata minor Greater Frigatebird [1013]	Reproduction	Known to occur
Phaethon lepturus White-tailed Tropicbird [1014]	Reproduction	Known to occur
Sterna dougallii Roseate Tern [817]	Reproduction	Known to occur
Sterna dougallii Roseate Tern [817]	Resting	Known to occur
Sternula albifrons sinensis Little Tern [82850]	Reproduction	Known to occur
Sternula albifrons sinensis Little Tern [82850]	Resting	Known to occur
Sula leucogaster Brown Booby [1022]	Reproduction	Known to occur
Sula sula Red-footed Booby [1023]	Reproduction	Known to occur
Thalasseus bengalensis Lesser Crested Tern [66546]	Reproduction	Known to occur
Sharks		
Rhincodon typus Whale Shark [66680]	Foraging	Known to occur
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging	Likely to be present
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Migration	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Migration	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Reproduction	Known to occur

Scientific Name	Behaviour	Presence
Megaptera novaeangliae		
Humpback Whale [38]	Resting	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 is 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 on the contents of this report.

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 point locations and environmental data layers.

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 when time permits.

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 breeding sites; and
- 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: 25-Jun-2026

[Summary](#)
[Details](#)
- [Matters of NES](#)
- [Other Matters Protected by the EPBC Act](#)
- [Extra Information](#)

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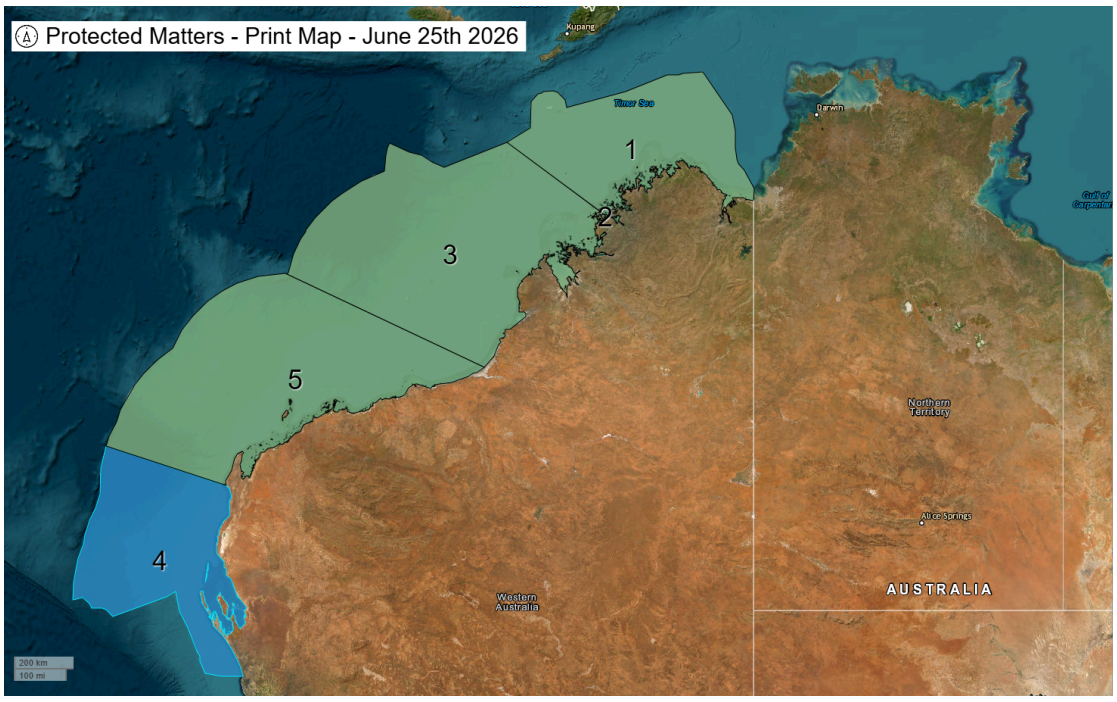


Figure 1: North West Marine Region - South (Part 4)

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.

World Heritage Properties:	2
National Heritage Places:	4
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	3
Listed Threatened Ecological Communities:	1
Listed Threatened Species:	84
Listed Migratory Species:	80

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	7
Commonwealth Heritage Places:	2
Listed Marine Species:	121
Whales and Other Cetaceans:	34
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	14
Habitat Critical to the Survival of Marine Turtles:	2

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	29
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	43
Key Ecological Features (Marine):	6
Biologically Important Areas:	23
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

World Heritage Properties		[Resource Information]
Name	State	Legal Status
Ningaloo Coast	WA	Declared property
Shark Bay, Western Australia	WA	Declared property

National Heritage Places		[Resource Information]
Name	State	Legal Status
Historic		
HMAS Sydney II and HSK Kormoran Shipwreck Sites	EXT	Listed place
Dirk Hartog Landing Site 1616 - Cape Inscription Area	WA	Listed place
Natural		
Shark Bay, Western Australia	WA	Listed place
The Ningaloo Coast	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)
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
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat likely to occur within area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting likely to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat may occur within area
Falco hypoleucos Grey Falcon [929]	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 likely to occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Endangered	Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Malurus leucopterus leucopterus White-winged Fairy-wren (Dirk Hartog Island), Dirk Hartog Black-and-White Fairy-wren [26004]	Vulnerable	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Pezoporus occidentalis Night Parrot [59350]	Critically Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Phaethon rubricauda westralis Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird [91824]	Endangered	Species or species habitat likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting likely to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Species or species habitat may occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Breeding likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
[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 likely to occur within area
[Xenus cinereus](#) Terek Sandpiper [59300]	Vulnerable	Roosting likely to occur within area
[Zanda latirostris listed as Calyptorhynchus latirostris](#) Carnaby's Black Cockatoo, Short-billed Black-cockatoo [87737]	Endangered	Breeding likely to occur within area
FISH		
[Milyeringa veritas](#) Cape Range Cave Gudgeon, Blind Gudgeon [66676]	Vulnerable	Species or species habitat may occur within area
MAMMAL		
[Balaenoptera borealis](#) Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[Balaenoptera musculus](#) Blue Whale [36]	Endangered	Migration route known to occur within area
[Balaenoptera physalus](#) Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[Bettongia lesueur lesueur](#) Burrowing Bettong (Shark Bay), Boodie [66659]	Vulnerable	Translocated population known to occur within area
[Bettongia penicillata ogilbyi](#) Woylie [66844]	Endangered	Species or species habitat likely to occur within area
[Dasyurus geoffroii](#) Chuditch, Western Quoll [330]	Vulnerable	Translocated population known to occur within area

Scientific Name	Threatened Category	Presence Text
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Lagorchestes hirsutus bernieri Rufous Hare-wallaby (Bernier Island) [66662]	Vulnerable	Translocated population known to occur within area
Lagorchestes hirsutus dorreae Rufous Hare-wallaby (Dorre Island) [66663]	Vulnerable	Translocated population known to occur within area
Lagostrophus fasciatus fasciatus Banded Hare-wallaby, Merrnine, Marnine, Munning [66664]	Vulnerable	Translocated population known to occur within area
Leporillus conditor Wopilkara, Greater Stick-nest Rat [137]	Vulnerable	Translocated population known to occur within area
Macrotis lagotis Greater Bilby [282]	Vulnerable	Translocated population known to occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat may occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat may occur within area
Perameles bougainville Shark Bay Bandicoot [278]	Endangered	Translocated population known to occur within area
Petrogale lateralis lateralis Black-flanked Rock-wallaby, Mororong, Black-footed Rock Wallaby [66647]	Endangered	Species or species habitat likely to occur within area
Pseudomys fieldi Shark Bay Mouse, Djoongari, Alice Springs Mouse [113]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Rhinonicteris aurantia (Pilbara form)		
Pilbara Leaf-nosed Bat [82790]	Vulnerable	Species or species habitat may occur within area
Sousa sahulensis		
Australian Humpback Dolphin [87942]	Vulnerable	Species or species habitat likely to occur within area
PLANT		
Androcalva bivillosa		
Straggling Androcalva [87807]	Critically Endangered	Species or species habitat may occur within area
Beyeria lepidopetala		
Small-petalled Beyeria, Short-petalled Beyeria [18362]	Endangered	Species or species habitat likely to occur within area
Caladenia barbarella		
Small Dragon Orchid, Common Dragon Orchid [68686]	Endangered	Species or species habitat may occur within area
Caladenia bryceana subsp. cracens		
Northern Dwarf Spider-orchid [64556]	Vulnerable	Species or species habitat may occur within area
Caladenia elegans		
Elegant Spider-orchid [56775]	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
Drakaea concolor		
Kneeling Hammer-orchid [56777]	Vulnerable	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
Lechenaultia chlorantha		
Kalbarri Leschenaultia [16763]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
[Stachystemon nematophorus](#) Three-flowered Stachystemon [81447]	Vulnerable	Species or species habitat likely to occur within area
[Wurmbea tubulosa](#) Long-flowered Nancy [12739]	Endangered	Species or species habitat may 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 foliosquama](#) Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat likely to occur within area
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
[Ctenotus zastictus](#) Hamelin Ctenotus [25570]	Vulnerable	Species or species habitat likely to occur within area
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
[Egernia stokesii badia](#) Western Spiny-tailed Skink, Baudin Island Spiny-tailed Skink [64483]	Endangered	Species or species habitat likely to occur within area
[Eretmochelys imbricata](#) Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
[Natator depressus](#) Flatback Turtle [59257]	Vulnerable	Breeding likely to occur within area
SHARK		
[Carcharias taurus (west coast population)](#) Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat likely to occur within area
Centrophorus uyato Little Gulper Shark [68446]	Conservation Dependent	Species or species habitat likely to occur within area
Pristis pristis Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat may occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area
SPIDER		
Idiosoma nigrum Shield-backed Trapdoor Spider, Black Rugose Trapdoor Spider [66798]	Vulnerable	Species or species habitat likely to occur within area

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
null		
Balaenoptera omurai Omura's Whale [87136]		Species or species habitat likely to occur within area
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Ardenna pacifica Wedge-tailed Shearwater [84292]		Breeding likely to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Hydroprogne caspia Caspian Tern [808]		Breeding likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Onychoprion anaethetus Bridled Tern [82845]		Breeding likely to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat may occur within area
Sterna dougallii Roseate Tern [817]		Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Sternula albifrons Little Tern [82849]	Vulnerable	Species or species habitat may occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
Migratory Marine Species		
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat likely to occur within area
Carcharias taurus Grey Nurse Shark [64469]		Species or species habitat likely to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat likely to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Dugong dugon Dugong [28]		Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may 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 likely 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 likely to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat may occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pristis pristis Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat may occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Sousa sahulensis as Sousa chinensis Australian Humpback Dolphin [87942]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Migratory Terrestrial Species		
Hirundo rustica Barn Swallow [662]		Species or species habitat likely to occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting likely to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
Calidris alba Sanderling [875]		Roosting likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting likely to occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting likely to occur within area

Scientific Name	Threatened Category	Presence Text
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Numenius phaeopus Whimbrel [849]		Roosting likely to occur within area
Pandion haliaetus Osprey [952]		Breeding likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalasseus bergii		
Greater Crested Tern [83000]		Breeding likely to occur within area
Tringa brevipes		
Grey-tailed Tattler [851]		Roosting likely to occur within area
Tringa glareola		
Wood Sandpiper [829]		Roosting likely to occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area
Xenus cinereus		
Terek Sandpiper [59300]	Vulnerable	Roosting 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
Australian Postal Corporation	
Lot 1 S018861 [AGPR7043]	WA
Department of Climate Change, Energy, the Environment and Water	
HMAS Sydney II and HSK Kormoran Shipwreck Sites [CHL_106062]	EXT
Ningaloo Marine Area - Commonwealth Waters [CHL_105548]	WA
Department of Defence	
JORN Radar Site - Carnarvon [DD_3382]	WA
Department of Home Affairs	
Lot 615 P023695 [AGPR6093]	WA
Lot827 DP55249 [AGPR6100]	WA
Services Australia	
Lot 345 D054621 [AGPR4717]	WA

Commonwealth Heritage Places [Resource Information]

Name	State	Status
Historic		

Name	State	Status
HMAS Sydney II and HSK Kormoran Shipwreck Sites	EXT	Listed place
Natural		
Ningaloo Marine Area - Commonwealth Waters	WA	Listed place

Listed Marine Species

[Resource Information]

Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area 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 likely to occur within area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting likely 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	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Calidris alba Sanderling [875]		Roosting likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area overfly marine area
Calidris ruficollis Red-necked Stint [860]		Roosting likely to occur within area overfly marine area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting likely to occur within area overfly marine area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Roosting likely to occur within area overfly marine area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area overfly marine area
Chroicocephalus novaehollandiae as Larus novaehollandiae Silver Gull [82326]		Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Breeding likely to occur within area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Roosting likely to occur within area overfly marine area
Hirundo rustica Barn Swallow [662]		Species or species habitat likely to occur within area overfly marine area
Hydroprogne caspia as Sterna caspia Caspian Tern [808]		Breeding likely to occur within area
Larus pacificus Pacific Gull [811]		Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting likely to occur within area overfly marine area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	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 may occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely 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 likely to occur within area

Scientific Name	Threatened Category	Presence Text
Onychoprion anaethetus as Sterna anaethetus Bridled Tern [82845]		Breeding likely to occur within area
Onychoprion fuscatus as Sterna fuscata Sooty Tern [90682]		Breeding likely to occur within area
Pandion haliaetus Osprey [952]		Breeding likely to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat may occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting likely 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 likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
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 likely to occur within area
Sternula albifrons as Sterna albifrons		
Little Tern [82849]	Vulnerable	Species or species habitat may occur within area
Sternula nereis as Sterna nereis		
Fairy Tern [82949]		Breeding likely to occur within area
Thalassarche carteri		
Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta		
Shy Albatross [89224]	Endangered	Species or species habitat may occur within area
Thalassarche impavida		
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris		
Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi		
White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
Thalasseus bengalensis as Sterna bengalensis		
Lesser Crested Tern [66546]		Breeding likely to occur within area
Thalasseus bergii as Sterna bergii		
Greater Crested Tern [83000]		Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Tringa brevipes as Heteroscelus brevipes		
Grey-tailed Tattler [851]		Roosting likely to occur within area
Tringa glareola		
Wood Sandpiper [829]		Roosting likely to occur within area overfly marine area
Tringa nebularia		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area
Xenus cinereus		
Terek Sandpiper [59300]	Vulnerable	Roosting likely to occur within area overfly marine area
Fish		
Bulbonaricus brauni		
Braun's Pughead Pipefish, Pug-headed Pipefish [66189]		Species or species habitat may occur within area
Campichthys galei		
Gale's Pipefish [66191]		Species or species habitat may occur within area
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
Doryrhamphus negrosensis		
Flagtail Pipefish, Masthead Island Pipefish [66213]		Species or species habitat may occur within area
Festucalex scalaris		
Ladder Pipefish [66216]		Species or species habitat may occur within area
Filicampus tigris		
Tiger Pipefish [66217]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area
Halicampus spinirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophora as Haliichthys taeniophorus Ribboned Pipehorse, Ribboned Pipefish, Ribboned Seadragon [94706]		Species or species habitat may occur within area
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus subelongatus West Australian Seahorse [66722]		Species or species habitat may occur within area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
Idiotropiscis australe as Acentronura australe Southern Pygmy Pipehorse [74958]		Species or species habitat may occur within area
Lissocampus fatiloquus Prophet's Pipefish [66250]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Mitotichthys meraculus Western Crested Pipefish [66259]		Species or species habitat may occur within area
Nannocampus subosseus Bonyhead Pipefish, Bony-headed Pipefish [66264]		Species or species habitat may occur within area
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 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
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
[Syngnathoides biaculeatus](#) Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
[Trachyrhamphus bicoarctatus](#) Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
[Trachyrhamphus longirostris](#) Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
[Urocampus carinirostris](#) Hairy Pipefish [66282]		Species or species habitat may occur within area
[Vanacampus margaritifer](#) Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
Mammal		
[Dugong dugon](#) Dugong [28]		Species or species habitat likely to occur within area
[Neophoca cinerea](#) Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat may 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 foliosquama](#) Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat likely to occur within area
[Aipysurus laevis](#) Olive Sea Snake, Olive-brown Sea Snake [1120]		Species or species habitat may occur within area
[Aipysurus pooleorum](#) Shark Bay Sea Snake [66061]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Emydocephalus annulatus Eastern Turtle-headed Sea Snake [1125]		Species or species habitat may occur within area
Ephalophis greyae as Ephalophis greyi Mangrove Sea Snake [93738]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Hydrophis elegans Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area
Hydrophis kingii as Disteira kingii Spectacled Sea Snake [93511]		Species or species habitat may occur within area
Hydrophis major as Disteira major Olive-headed Sea Snake [93512]		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	Breeding likely to occur within area

Whales and Other Cetaceans		[Resource Information]
Current Scientific Name	Status	Type of Presence

Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera omurai Omura's Whale [87136]		Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Globicephala melas Long-finned Pilot Whale [59282]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Indopacetus pacificus Longman's Beaked Whale [72]		Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
Lagenodelphis hosei Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Breeding known to occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Mesoplodon ginkgodens Gingko-toothed Beaked Whale, Gingko-toothed Whale, Gingko Beaked Whale [59564]		Species or species habitat may occur within area
Mesoplodon grayi Gray's Beaked Whale, Scamperdown Whale [75]		Species or species habitat may occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
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]	Vulnerable	Species or species habitat likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks [Resource Information]

Park Name	Zone & IUCN Categories
Abrolhos	Habitat Protection Zone (IUCN IV)
Carnarvon Canyon	Habitat Protection Zone (IUCN IV)
Gascoyne	Habitat Protection Zone (IUCN IV)
Gascoyne	Habitat Protection Zone (IUCN IV)
Abrolhos	Multiple Use Zone (IUCN VI)
Abrolhos	Multiple Use Zone (IUCN VI)
Gascoyne	Multiple Use Zone (IUCN VI)
Shark Bay	Multiple Use Zone (IUCN VI)
Abrolhos	National Park Zone (IUCN II)
Gascoyne	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)

Habitat Critical to the Survival of Marine Turtles [Resource Information]

Scientific Name	Behaviour	Presence
Nov-Feb		
Caretta caretta Loggerhead Turtle [1763]	Nesting	Known to occur
Oct - Mar		

Scientific Name	Behaviour	Presence
Chelonia mydas Green Turtle [1765]	Nesting	Known to occur

Extra Information

State and Territory Reserves		[Resource Information]
Protected Area Name	Reserve Type	State
Bernier And Dorre Islands	Nature Reserve	WA
Cape Range (South)	National Park	WA
Chinamans Pool	Nature Reserve	WA
Dirk Hartog Island	National Park	WA
Faure Island	Private Nature Reserve	WA
Francois Peron	National Park	WA
Freycinet, Double Islands etc	Nature Reserve	WA
Hamelin Pool	Marine Nature Reserve	WA
Hamelin Station	Conservation Reserve	WA
Kalbarri	National Park	WA
Koks Island	Nature Reserve	WA
Monkey Mia Reserve	5(1)(h) Reserve	WA
Nanga Station	NRS Addition - Gazettal in Progress	WA
Ningaloo	Marine Park	WA
Nyingguulu (Ningaloo) Coastal Reserve	5(1)(h) Reserve	WA
One Tree Point	Nature Reserve	WA
Part Murchison house	NRS Addition - Gazettal in Progress	WA
Sedimentary Deposits Reserve	5(1)(g) Reserve	WA

Protected Area Name	Reserve Type	State
Shark Bay	Marine Park	WA
Shell Beach	Conservation Park	WA
Tamala Pastoral Lease (Part)	NRS Addition - Gazettal in Progress	WA
Unnamed WA26400	5(1)(h) Reserve	WA
Unnamed WA37338	5(1)(h) Reserve	WA
Unnamed WA37383	5(1)(h) Reserve	WA
Unnamed WA37500	5(1)(g) Reserve	WA
Unnamed WA44688	5(1)(h) Reserve	WA
Unnamed WA49144	Conservation Park	WA
Yaringga	NRS Addition - Gazettal in Progress	WA
Zuytdorp	Nature Reserve	WA

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia West	2024/09826		Completed
Midwest Offshore Wind Farm	2022/09264		Assessment
Monkey Mia Dolphin Resort Solar Farm	2023/09700		Referral Decision
Murchison Hydrogen Renewables Project	2022/09217		Assessment
Controlled action			
Boating Facility	2002/830	Controlled Action	Completed
Coburn Mineral Sand Project	2003/1221	Controlled Action	Post-Approval
Mauds Landing Marina	2000/98	Controlled Action	Completed
Nava-1 Cable System	2001/510	Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Shark Bay Resources Dredging	2020/8717	Controlled Action	Post-Approval
Shark Bay Salt Facilities upgrade for direct ocean disposal of bitterns discharge	2011/5984	Controlled Action	Completed
Not controlled action			
Accommodation Units Sunday Island Bay, Dirk Hartog Island, WA	2015/7540	Not Controlled Action	Completed
APX-West Fibre-optic telecommunications cable system, WA to Singapore	2013/7102	Not Controlled Action	Completed
archaeological surveys & excavation at historic sites, Cape Inscription	2006/3027	Not Controlled Action	Completed
Boating Facility	2002/832	Not Controlled Action	Completed
Carnarvon Power Station Development Project	2010/5669	Not Controlled Action	Completed
Clearing of vegetation for borrow pit and infrastructure areas	2017/7947	Not Controlled Action	Completed
Drilling between Kalbarri and Cliff Head	2005/2185	Not Controlled Action	Completed
Expansion of Monkey Mia Resort	2003/1146	Not Controlled Action	Completed
Extention to the existing Blind Strait Black Lip Pearl Oyster Farm	2004/1342	Not Controlled Action	Completed
Flood Management works	2006/3127	Not Controlled Action	Completed
Hadda 1,Flying Foam 1,Magnat 1 exploration drill	2004/1697	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
INDIGO West Submarine Telecommunications Cable, WA	2017/8126	Not Controlled Action	Completed
Realignment of Access track, Bottle Bay, Shark Bay	2004/1780	Not Controlled Action	Completed
Useless Loop Road Upgrade	2000/83	Not Controlled Action	Completed
Not controlled action (particular manner)			

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
2D seismic survey	2008/4493	Not Controlled Action (Particular Manner)	Post-Approval
Acheron Non-Exclusive 2D Seismic Survey	2009/4968	Not Controlled Action (Particular Manner)	Post-Approval
Acheron Non-Exclusive 2D Seismic Survey	2008/4565	Not Controlled Action (Particular Manner)	Post-Approval
Australia to Singapore Fibre Optic Submarine Cable System	2011/6127	Not Controlled Action (Particular Manner)	Post-Approval
Coverack Marine Seismic Survey	2001/399	Not Controlled Action (Particular Manner)	Post-Approval
Guacamole 2D Marine Seismic Survey	2008/4381	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
Laying a submarine optical fibre telecommunications cable, Perth to Singapore and Jakarta	2014/7332	Not Controlled Action (Particular Manner)	Post-Approval
Marine reconnaissance survey	2008/4466	Not Controlled Action (Particular Manner)	Post-Approval
Quiberon 2D Seismic Survey, permit area WA-385P, offshore of Carnarvon	2009/5077	Not Controlled Action (Particular Manner)	Post-Approval
Sampling of Stromatolites, additional sites, Mamelin Pool,WA	2013/7071	Not Controlled Action (Particular Manner)	Post-Approval
Sampling of Stromatolites and Sediments	2012/6307	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Supply of road building material areas Shark Bay Region WA	2012/6280	Not Controlled Action (Particular Manner)	Post-Approval
Tortilla 2D Seismic Survey, WA	2011/6110	Not Controlled Action (Particular Manner)	Post-Approval
Useless Loop Port Maintenance Works and Infrastructure Upgrade	2009/4791	Not Controlled Action (Particular Manner)	Post-Approval
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
Geoscientific field-trip to Shark Bay	2012/6380	Referral Decision	Completed
Power Station Development	2009/4957	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
Ancient coastline at 90-120m depth	South-west
Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula	North-west
Commonwealth waters adjacent to Ningaloo Reef	North-west
Wallaby Saddle	North-west
Western demersal slope and associated fish communities	South-west
Western rock lobster	South-west

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence
Dugong		

Scientific Name	Behaviour	Presence
Dugong dugon Dugong [28]	Foraging	Known to occur
Dugong dugon Dugong [28]	Migration	Known to occur
Dugong dugon Dugong [28]	Reproduction	Known to occur
Marine Turtles		
Caretta caretta Loggerhead Turtle [1763]	Reproduction	Low density
Eretmochelys imbricata Hawksbill Turtle [1766]	Reproduction	Known to occur
Seabirds		
Ardenna pacifica Wedge-tailed Shearwater [84292]	Foraging	Known to occur
Ardenna pacifica Wedge-tailed Shearwater [84292]	Reproduction	Known to occur
Hydroprogne caspia Caspian Tern [808]	Foraging	Known to occur
Larus pacificus Pacific Gull [811]	Foraging	Known to occur
Onychoprion anaethetus Bridled Tern [82845]	Foraging	Likely to occur
Onychoprion fuscatus Sooty Tern [90682]	Foraging	Known to occur
Pelagodroma marina White-faced Storm-petrel [1016]	Foraging	Known to occur
Puffinus assimilis Little Shearwater [59363]	Foraging	Likely to occur
Sterna dougallii Roseate Tern [817]	Reproduction	Known to occur

Scientific Name	Behaviour	Presence
Sternula nereis Fairy Tern [82949]	Reproduction	Known to occur
Thalasseus bengalensis Lesser Crested Tern [66546]	Reproduction	Known to occur
Sharks		
Rhincodon typus Whale Shark [66680]	Foraging	Known to occur
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging	Likely to be present
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Migration	Known to occur
Eubalaena australis Southern Right Whale [40]	Migration	
Eubalaena australis Southern Right Whale [40]	Reproduction	
Megaptera novaeangliae Humpback Whale [38]	Migration	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Resting	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 is 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 on the contents of this report.

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 point locations and environmental data layers.

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 when time permits.

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 breeding sites; and
- 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: 25-Jun-2026

[Summary](#)
[Details](#)
- [Matters of NES](#)
- [Other Matters Protected by the EPBC Act](#)
- [Extra Information](#)

[Caveat](#)
[Acknowledgements](#)

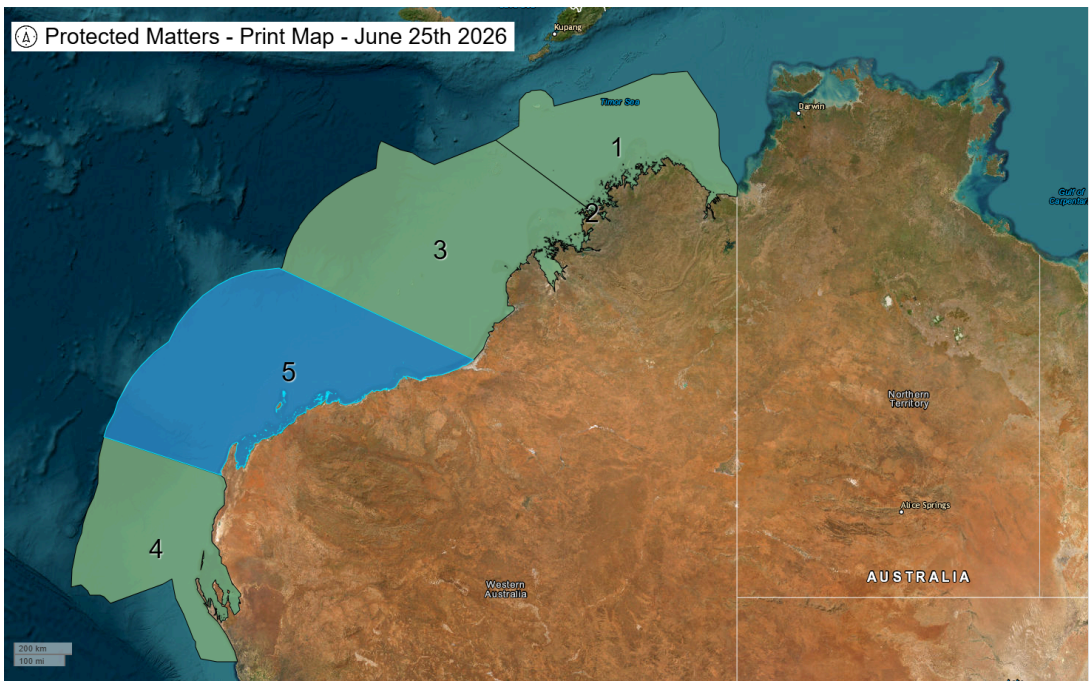


Figure 1: North West Marine Region - South Central (Part 3)

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	2
National Heritage Places:	2
Wetlands of International Importance (Ramsar	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	3
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	69
Listed Migratory Species:	90

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	93
Commonwealth Heritage Places:	2
Listed Marine Species:	133
Whales and Other Cetaceans:	33
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	11
Habitat Critical to the Survival of Marine Turtles:	4

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	57
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	301
Key Ecological Features (Marine):	6
Biologically Important Areas:	35
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

World Heritage Properties		[Resource Information]
Name	State	Legal Status
Murujuga Cultural Landscape	WA	Declared property
Ningaloo Coast	WA	Declared property

National Heritage Places		[Resource Information]
Name	State	Legal Status
Indigenous		
Dampier Archipelago (including Burrup Peninsula)	WA	Listed place
Natural		
The Ningaloo Coast	WA	Listed place

Wetlands of International Importance (Ramsar Wetlands)	[Resource Information]
Ramsar Site Name	Proximity
Eighty-mile beach	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 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 likely to occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting likely to occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat may occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Endangered	Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Malurus leucopterus edouardi White-winged Fairy-wren (Barrow Island), Barrow Island Black-and-white Fairy-wren [26194]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Papasula abbotti Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area
Pezoporus occidentalis Night Parrot [59350]	Critically Endangered	Species or species habitat may occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Phaethon rubricauda westralis Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird [91824]	Endangered	Species or species habitat likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting likely to occur within area
Polytelis alexandrae Princess Parrot, Alexandra's Parrot [758]	Vulnerable	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding likely to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Breeding likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche impavida		
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area
Xenus cinereus		
Terek Sandpiper [59300]	Vulnerable	Roosting likely to occur within area
CRUSTACEAN		
Kumonga exleyi		
Cape Range Remipede [86875]	Vulnerable	Species or species habitat likely to occur within area
FISH		
Milyeringa justitia		
Barrow Cave Gudgeon [86867]	Endangered	Species or species habitat likely to occur within area
Milyeringa veritas		
Cape Range Cave Gudgeon, Blind Gudgeon [66676]	Vulnerable	Species or species habitat likely to occur within area
Ophisternon candidum		
Blind Cave Eel [66678]	Vulnerable	Species or species habitat likely to occur within area
MAMMAL		
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Bettongia lesueur Barrow and Boodie Islands subspecies		
Boodie, Burrowing Bettong (Barrow and Boodie Islands) [88021]	Vulnerable	Translocated population known to occur within area
Dasyurus hallucatus		
Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area
Eubalaena australis		
Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Isoodon auratus barrowensis		
Golden Bandicoot (Barrow Island) [66666]	Vulnerable	Translocated population known to occur within area
Lagorchestes conspicillatus conspicillatus		
Spectacled Hare-wallaby (Barrow Island) [66661]	Vulnerable	Translocated population known to occur within area
Lagorchestes hirsutus Central Australian subspecies		
Mala, Rufous Hare-Wallaby (Central Australia) [88019]	Endangered	Translocated population known to occur within area
Macroderma gigas		
Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area
Macrotis lagotis		
Greater Bilby [282]	Vulnerable	Species or species habitat likely to occur within area
Orcaella heinsohni		
Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area
Osphranter robustus isabellinus		
Barrow Island Wallaroo, Barrow Island Euro [89262]	Vulnerable	Species or species habitat likely to occur within area
Petrogale lateralis lateralis		
Black-flanked Rock-wallaby, Moororong, Black-footed Rock Wallaby [66647]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
[Pseudomys fieldi](#) Shark Bay Mouse, Djoongari, Alice Springs Mouse [113]	Vulnerable	Species or species habitat likely to occur within area
[Rhinonicteris aurantia (Pilbara form)](#) Pilbara Leaf-nosed Bat [82790]	Vulnerable	Species or species habitat likely to occur within area
[Sousa sahulensis](#) Australian Humpback Dolphin [87942]	Vulnerable	Species or species habitat likely to occur within area
PLANT		
[Minuria tridens](#) Minnie Daisy [13753]	Vulnerable	Species or species habitat likely 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 foliosquama](#) Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat likely to occur within area
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
[Ctenotus zastictus](#) Hamelin Ctenotus [25570]	Vulnerable	Species or species habitat likely to occur within area
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
[Eretmochelys imbricata](#) Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
[Lerista nevinae](#) Nevin's Slider [85296]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Liasis olivaceus barroni		
Pilbara Olive Python [66699]	Vulnerable	Species or species habitat likely to occur within area
Liopholis kintorei		
Great Desert Skink, Tjakura, Warrarna, Mulyamiji, Tjalapa, Nampu [83160]	Vulnerable	Species or species habitat may occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Breeding likely to occur within area
SHARK		
Carcharias taurus (west coast population)		
Grey Nurse Shark (west coast population) [68752]	Vulnerable	Congregation or aggregation likely to occur within area
Carcharodon carcharias		
White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat likely to occur within area
Pristis clavata		
Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding likely to occur within area
Pristis pristis		
Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat likely to occur within area
Pristis zijsron		
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Sphyrna lewini		
Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
null		
Balaenoptera omurai		
Omura's Whale [87136]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat likely to occur within area
Ardenna pacifica Wedge-tailed Shearwater [84292]		Breeding likely to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Breeding likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
Hydroprogne caspia Caspian Tern [808]		Breeding likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Onychoprion anaethetus Bridled Tern [82845]		Breeding likely to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat likely to occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Sterna dougallii Roseate Tern [817]		Breeding likely to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding likely to occur within area
Sula dactylatra Masked Booby [1021]		Breeding likely to occur within area
Sula leucogaster Brown Booby [1022]		Breeding likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Migratory Marine Species		
Anoxypristis cuspidata Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area

Scientific Name	Threatened Category	Presence Text
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat likely to occur within area
Carcharias taurus Grey Nurse Shark [64469]		Species or species habitat likely to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat likely to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Dugong dugon Dugong [28]		Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Breeding known to occur within area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat likely 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 likely to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding likely to occur within area
Pristis pristis Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat likely to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Sousa sahulensis as Sousa chinensis		
Australian Humpback Dolphin [87942]	Vulnerable	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 likely to occur within area
Migratory Terrestrial Species		
Cuculus optatus		
Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Hirundo rustica		
Barn Swallow [662]		Species or species habitat likely to occur within area
Motacilla cinerea		
Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava		
Yellow Wagtail [644]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat likely to occur within area
Arenaria interpres		
Ruddy Turnstone [872]	Vulnerable	Roosting likely to occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
Calidris alba		
Sanderling [875]		Roosting likely to occur within area

Scientific Name	Threatened Category	Presence Text
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area
Calidris falcinellus as Limicola falcinellus Broad-billed Sandpiper [91731]		Roosting likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area
Calidris pugnax as Philomachus pugnax Ruff [91256]		Roosting likely to occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting likely to occur within area
Calidris subminuta Long-toed Stint [861]		Species or species habitat likely to occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting likely to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Roosting likely to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area

Scientific Name	Threatened Category	Presence Text
Glareola maldivarum Oriental Pratincole [840]		Roosting likely to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Numenius phaeopus Whimbrel [849]		Roosting likely to occur within area
Pandion haliaetus Osprey [952]		Breeding likely to occur within area
Phalaropus lobatus Red-necked Phalarope [838]		Species or species habitat likely to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting likely to occur within area
Thalasseus bergii Greater Crested Tern [83000]		Breeding likely to occur within area
Tringa brevipes Grey-tailed Tattler [851]		Roosting likely to occur within area

Scientific Name	Threatened Category	Presence Text
Tringa glareola Wood Sandpiper [829]		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
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting likely to occur within area
Tringa totanus Common Redshank, Redshank [835]		Roosting likely to occur within area
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Roosting 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
Australian Maritime Safety Authority	
Lot 267 P066689 [AGPR5847]	WA
Lot 3248 P216031 [AGPR5848]	WA
Lot 375 P208153 [AGPR262]	WA
Lot 3959 P216877 [AGPR5846]	WA
Lot 3976 P216877 [AGPR5845]	WA
Lot 5478 P185135 [AGPR5849]	WA
Lot 591 P056139 [AGPR5851]	WA
Lot 682 P061231 [AGPR5850]	WA
Australian Postal Corporation	
Lot 1549 P213670 [AGPR7196]	WA
Lot 3908 P216465 [AGPR7132]	WA
Bureau of Meteorology	

Commonwealth Land Name	State
Lot 1102 P217148 [AGPR5866]	WA
Lot 819 P211578 [AGPR5865]	WA
Lot 973 P216414 [AGPR5863]	WA
Department of Agriculture, Fisheries and Forestry	
Lot 1260 P213923 [AGPR5883]	WA
Lot 1386 P213671 [AGPR5882]	WA
Lot 5639 P216779 [AGPR5884]	WA
Department of Climate Change, Energy, the Environment and Water	
Learmonth Air Weapons Range Facility [CHL_105551]	WA
Ningaloo Marine Area - Commonwealth Waters [CHL_105548]	WA
Department of Defence	
Exmouth Area A VLF Transmitter Station [DD_0083]	WA
Exmouth Area B Admin and HF Transmitter [DD_0082]	WA
Exmouth RAAF Radar Site Twin Tanks [DD_0973]	WA
Exmouth RAAF Radar Site - Vlaming Head [DD_0974]	WA
Karratha / Dampier Rifle Range [DD_3218]	WA
Learmonth Air Weapons Range [DD_0961]	WA
Learmonth RAAF base [AGPR4436]	WA
Learmonth RAAF base [AGPR4430]	WA
Learmonth RAAF base [AGPR4432]	WA
Learmonth RAAF base [AGPR4433]	WA
Learmonth RAAF base [AGPR4434]	WA
Learmonth RAAF base [AGPR4437]	WA
Learmonth RAAF base [AGPR4428]	WA
Learmonth RAAF base [AGPR4429]	WA
Learmonth RAAF base [AGPR4425]	WA
Learmonth RAAF base [AGPR4462]	WA
Learmonth RAAF base [AGPR4423]	WA

Commonwealth Land Name	State
Learmonth RAAF base [AGPR4418]	WA
Learmonth RAAF base [AGPR4419]	WA
Learmonth RAAF base [AGPR4414]	WA
Learmonth RAAF base [AGPR4435]	WA
Learmonth RAAF base [AGPR4431]	WA
Learmonth RAAF base [AGPR4466]	WA
Learmonth RAAF base [AGPR4413]	WA
Learmonth RAAF base [AGPR4463]	WA
Learmonth RAAF base [AGPR4417]	WA
Learmonth RAAF base [AGPR4416]	WA
Learmonth RAAF base [AGPR4415]	WA
Learmonth RAAF base [AGPR4467]	WA
Learmonth RAAF base [AGPR4464]	WA
Learmonth WW2 Transmitter Site [DD_1355]	WA
Lot 148 Plan P215203 [AGPR4394]	WA
Lot 525 P168696 [AGPR4471]	WA
Patrol Boat Berth Dampier [DD_3256]	WA
Port Hedland Training Depot [DD_0773]	WA
RAAF Learmonth [DD_0960]	WA
Taylor Barracks [AGPR4457]	WA
Taylor Barracks [AGPR4455]	WA
Taylor Barracks [AGPR4456]	WA
Taylor Barracks - Karratha [DD_1348]	WA
Department of Home Affairs	
120 P017820 [AGPR007602]	WA
Lot 1172 P214561 [AGPR6128]	WA
Lot 1316 P214560 [AGPR4734]	WA

Commonwealth Land Name	State
Lot 1 D093901 [AGPR6123]	WA
Lot 22 P013834 [AGPR6124]	WA
Lot 307 P051763 [AGPR6118]	WA
Lot 311 P051763 [AGPR6115]	WA
Lot 328 P051763 [AGPR6117]	WA
Lot 329 P051763 [AGPR6116]	WA
Lot 371 P047355 [AGPR6084]	WA
Lot 374 P047355 [AGPR6086]	WA
Lot 381 P047355 [AGPR6088]	WA
Lot 385 P047355 [AGPR6087]	WA
Lot 388 P047355 [AGPR6089]	WA
Lot 420 P045431 [AGPR6081]	WA
Lot 421 P045431 [AGPR6079]	WA
Lot 43 P048174 [AGPR6113]	WA
Lot 447 P049116 [AGPR6080]	WA
Lot 448 P049116 [AGPR6078]	WA
Lot 473 P049116 [AGPR6083]	WA
Lot 479 P051753 [AGPR6090]	WA
Lot 565 P055507 [AGPR6121]	WA
Lot 5702 P216778 [AGPR6127]	WA
Lot 5704 P216778 [AGPR6122]	WA
Lot 5706 P216778 [AGPR6119]	WA
Lot 5719 P216778 [AGPR6129]	WA
Lot 5724 P216778 [AGPR6120]	WA
Lot 5728 P216778 [AGPR6125]	WA
Lot 5746 P216779 [AGPR6126]	WA
Lot 60 P048174 [AGPR6112]	WA

Commonwealth Land Name	State
Lot 683 P061231 [AGPR6131]	WA
Lot 691 P061231 [AGPR6130]	WA
Department of Infrastructure, Transport, Regional Development, Communications and the Arts	
Port Hedland Airport [AGPR5578]	WA
Services Australia	
Lot 3013 P215197 [AGPR6049]	WA
Lot 5734 P216778 [AGPR6050]	WA

Commonwealth Heritage Places [Resource Information]

Name	State	Status
Natural		
Learmonth Air Weapons Range Facility	WA	Listed place
Ningaloo Marine Area - Commonwealth Waters	WA	Listed place

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat likely to occur within area
Ardenna pacifica as Puffinus pacificus Wedge-tailed Shearwater [84292]		Breeding likely to occur within area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting likely to occur within area

Scientific Name	Threatened Category	Presence Text
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	Species or species habitat likely to occur within area
Calidris alba Sanderling [875]		Roosting likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Calidris falcinellus as Limicola falcinellus Broad-billed Sandpiper [91731]		Roosting likely to occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area overfly marine area
Calidris pugnax as Philomachus pugnax Ruff [91256]		Roosting likely to occur within area overfly marine area
Calidris ruficollis Red-necked Stint [860]		Roosting likely to occur within area overfly marine area
Calidris subminuta Long-toed Stint [861]		Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting likely to occur within area overfly marine area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting likely to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Roosting likely to occur within area overfly marine area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Roosting likely to occur within area overfly marine area
Chroicocephalus novaehollandiae as Larus novaehollandiae Silver Gull [82326]		Breeding likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Breeding likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Glareola maldivarum Oriental Pratincole [840]		Roosting likely to occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Roosting likely to occur within area overfly marine area
Hirundo rustica Barn Swallow [662]		Species or species habitat likely to occur within area overfly marine area
Hydroprogne caspia as Sterna caspia Caspian Tern [808]		Breeding likely to occur within area
Larus pacificus Pacific Gull [811]		Breeding likely to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting likely to occur within area overfly marine area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely 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 likely to occur within area
Onychoprion anaethetus as Sterna anaethetus Bridled Tern [82845]		Breeding likely to occur within area
Onychoprion fuscatus as Sterna fuscata Sooty Tern [90682]		Breeding likely to occur within area
Pandion haliaetus Osprey [952]		Breeding likely 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]		Species or species habitat likely to occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Phalaropus lobatus Red-necked Phalarope [838]		Species or species habitat likely to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting likely to occur within area overfly marine area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Roosting likely 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
Sterna dougallii Roseate Tern [817]		Breeding likely to occur within area
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Breeding likely to occur within area
Sternula nereis as Sterna nereis Fairy Tern [82949]		Breeding likely to occur within area
Stiltia isabella Australian Pratincole [818]		Roosting likely to occur within area overfly marine area
Sula dactylatra Masked Booby [1021]		Breeding likely to occur within area
Sula leucogaster Brown Booby [1022]		Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalasseus bengalensis as Sterna bengalensis Lesser Crested Tern [66546]		Breeding likely to occur within area
Thalasseus bergii as Sterna bergii Greater Crested Tern [83000]		Breeding likely to occur within area
Tringa brevipes as Heteroscelus brevipes Grey-tailed Tattler [851]		Roosting likely to occur within area
Tringa glareola Wood Sandpiper [829]		Species or species habitat likely to occur within area overfly marine area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting likely to occur within area overfly marine area
Tringa totanus Common Redshank, Redshank [835]		Roosting likely to occur within area overfly marine area
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Roosting likely to occur within area overfly marine area
Fish		
Bulbonaricus brauni Braun's Pughead Pipefish, Pug-headed Pipefish [66189]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Campichthys tricarinatus Three-keel Pipefish [66192]		Species or species habitat may occur within area
Choeroichthys brachysoma Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area
Choeroichthys latispinosus Muiron Island Pipefish [66196]		Species or species habitat may occur within area
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
Corythoichthys flavofasciatus Yellow-banded Pipefish [66200]		Species or species habitat may occur within area
Cosmocampus banneri Roughridge Pipefish [66206]		Species or species habitat may occur within area
Doryrhamphus dactyliophorus Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area
Doryrhamphus multiannulatus Many-banded Pipefish [66717]		Species or species habitat may occur within area
Doryrhamphus negrosensis Flagtail Pipefish, Masthead Island Pipefish [66213]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Festucalex scalaris Ladder Pipefish [66216]		Species or species habitat may occur within area
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
Halicampus nitidus Glittering Pipefish [66224]		Species or species habitat may occur within area
Halicampus spinirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophora as Haliichthys taeniophorus Ribboned Pipehorse, Ribboned Pipefish, Ribboned Seadragon [94706]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
Idiotropiscis larsonae as Acentronura larsonae Helen's Pygmy Pipehorse [74959]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Phoxocampus belcheri Black Rock Pipefish [66719]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
[Trachyrhamphus longirostris](#) Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Mammal		
[Dugong dugon](#) Dugong [28]		Species or species habitat likely 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 foliosquama](#) Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat likely to 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
[Aipysurus tenuis](#) Brown-lined Sea Snake, Mjoberg's Sea Snake [1121]		Species or species habitat may occur within area
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
[Crocodylus porosus](#) Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Emydocephalus annulatus Eastern Turtle-headed Sea Snake [1125]		Species or species habitat may occur within area
Ephalophis greyae as Ephalophis greyi Mangrove Sea Snake [93738]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Hydrelaps darwiniensis Port Darwin Sea Snake, Black-ringed Mangrove Sea Snake [1100]		Species or species habitat may occur within area
Hydrophis czeblukovi Fine-spined Sea Snake [59233]		Species or species habitat may occur within area
Hydrophis elegans Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area
Hydrophis kingii as Disteira kingii Spectacled Sea Snake [93511]		Species or species habitat may occur within area
Hydrophis macdowelli as Hydrophis mcdowelli MacDowell's Sea Snake, Small-headed Sea Snake, [75601]		Species or species habitat may occur within area
Hydrophis major as Disteira major Olive-headed Sea Snake [93512]		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 peronii as Acalyptophis peronii Horned Sea Snake [93509]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding likely 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 Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera omurai Omura's Whale [87136]		Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Current Scientific Name	Status	Type of Presence
[Delphinus delphis](#) Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
[Eubalaena australis](#) Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
[Feresa attenuata](#) Pygmy Killer Whale [61]		Species or species habitat may occur within area
[Globicephala macrorhynchus](#) Short-finned Pilot Whale [62]		Species or species habitat may occur within area
[Grampus griseus](#) Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
[Indopacetus pacificus](#) Longman's Beaked Whale [72]		Species or species habitat may occur within area
[Kogia breviceps](#) Pygmy Sperm Whale [57]		Species or species habitat may occur within area
[Kogia sima](#) Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
[Lagenodelphis hosei](#) Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
[Megaptera novaeangliae](#) Humpback Whale [38]		Breeding known to occur within area
[Mesoplodon densirostris](#) Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Mesoplodon ginkgodens Gingko-toothed Beaked Whale, Gingko-toothed Whale, Gingko Beaked Whale [59564]		Species or species habitat may occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely 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]	Vulnerable	Species or species habitat likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
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 likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks	[Resource Information]
Park Name	Zone & IUCN Categories
Dampier	Habitat Protection Zone (IUCN IV)
Gascoyne	Habitat Protection Zone (IUCN IV)
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)
Montebello	Multiple Use Zone (IUCN VI)
Dampier	National Park Zone (IUCN II)
Gascoyne	National Park Zone (IUCN II)
Ningaloo	National Park Zone (IUCN II)
Ningaloo	Recreational Use Zone (IUCN IV)

Habitat Critical to the Survival of Marine Turtles		[Resource Information]
Scientific Name	Behaviour	Presence
All year (Jun - Aug)		

Scientific Name	Behaviour	Presence
Natator depressus		
Flatback Turtle [59257]	Nesting	Known to occur
Nov-Feb		
Caretta caretta		
Loggerhead Turtle [1763]	Nesting	Known to occur
Oct - Feb		
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Nesting	Known to occur
Oct - Mar		
Chelonia mydas		
Green Turtle [1765]	Nesting	Known to occur

Extra Information

State and Territory Reserves		[Resource Information]
Protected Area Name	Reserve Type	State
Airlie Island	Nature Reserve	WA
Barrow Island	Nature Reserve	WA
Barrow Island	Marine Park	WA
Barrow Island	Marine Management Area	WA
Bedout Island	Nature Reserve	WA
Bessieres Island	Nature Reserve	WA
Boodie, Double Middle Islands	Nature Reserve	WA
Bundegi Coastal Park	5(1)(h) Reserve	WA
Burnside And Simpson Island	Nature Reserve	WA
Cape Range	National Park	WA
Cape Range (South)	National Park	WA
Eighty Mile Beach	Marine Park	WA
Giralia	NRS Addition - Gazettal in Progress	WA
Gnandaroo Island	Nature Reserve	WA

Protected Area Name	Reserve Type	State
Great Sandy Island	Nature Reserve	WA
Great Sandy Island	Nature Reserve	WA
Jarrkunpungu	Nature Reserve	WA
Jurabi Coastal Park	5(1)(h) Reserve	WA
Kujungurru Warrarn	Nature Reserve	WA
Kujungurru Warrarn	Conservation Park	WA
Little Rocky Island	Nature Reserve	WA
Locker Island	Nature Reserve	WA
Lowendal Islands	Nature Reserve	WA
Montebello Islands	Conservation Park	WA
Montebello Islands	Conservation Park	WA
Montebello Islands	Marine Park	WA
Muiron Islands	Nature Reserve	WA
Muiron Islands	Marine Management Area	WA
Murujuga	5(1)(h) Reserve	WA
Murujuga	National Park	WA
Ningaloo	Marine Park	WA
North Sandy Island	Nature Reserve	WA
North Turtle Island	Nature Reserve	WA
Rocky Island	Nature Reserve	WA
Round Island	Nature Reserve	WA
Serrurier Island	Nature Reserve	WA
Tent Island	Nature Reserve	WA
Thevenard Island	Nature Reserve	WA
Thevenard Island	Nature Reserve	WA
Unnamed WA36907	5(1)(h) Reserve	WA

Protected Area Name	Reserve Type	State
Unnamed WA36909	5(1)(h) Reserve	WA
Unnamed WA36910	5(1)(h) Reserve	WA
Unnamed WA36913	Nature Reserve	WA
Unnamed WA36915	Nature Reserve	WA
Unnamed WA38287	5(1)(h) Reserve	WA
Unnamed WA40322	5(1)(h) Reserve	WA
Unnamed WA40877	5(1)(h) Reserve	WA
Unnamed WA44665	5(1)(h) Reserve	WA
Unnamed WA44667	5(1)(h) Reserve	WA
Unnamed WA44672	5(1)(h) Reserve	WA
Unnamed WA52366	Nature Reserve	WA
Unnamed WA53015	Nature Reserve	WA
Victor Island	Nature Reserve	WA
Weld Island	Nature Reserve	WA
Whalebone Island	Nature Reserve	WA
Whitmore,Roberts,Doole Islands And Sandalwood Landing	Nature Reserve	WA
Y Island	Nature Reserve	WA

EPBC Act Referrals

[Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
3D Seismic Survey in the Carnarvon Bsin on the North West Shelf	2002/778		Completed
Ashburton Infrastructure Project	2021/9064		Completed
Babylon 3D Marine Seismic Survey, Commonwealth Waters, nr Exmouth WA	2013/7081		Completed
Balla Balla Export Facilities ? Design Variation	2022/09254		Assessment

Title of referral	Reference	Referral Outcome	Assessment Status
Browse to North West Shelf Development, Indian Ocean, WA	2018/8319		Approval
Burrup Common User Transmission Infrastructure	2022/09407		Post-Approval
Burrup Peninsula Seawater Supply Scheme Upgrade	2023/09698		Completed
Dampier Cargo Wharf Extension and Landside Redevelopment Project	2022/09237		Post-Approval
Dampier Seawater Desalination Plant	2022/09395		Completed
DAVROS MC 3D marine seismic survey northwaet of Dampier, WA	2013/7092		Completed
Deep Water Northwest Shelf 2D Seismic Survey	2007/3260		Completed
Development of Mutineer and Exeter petroleum fields for oil production, Permit	2003/1033		Completed
Gorgon Gas Development	2003/1294		Post-Approval
Ningaloo Lighthouse Development, 17km north west Exmouth, Western Australia	2020/8693		Post-Approval
North West Shelf Project Extension, Carnarvon Basin, WA	2018/8335		Approval
Offshore Dredge Spoil Disposal - Mardie Project	2024/10054		Referral Decision
Optimised Mardie Project ? Additional Triodia Grassland Habitat Clearing	2024/10094		Referral Decision
Optimised Mardie Solar Salt Project	2022/9169		Post-Approval
Port Hedland Green Steel Project - Stage 1	2023/09764		Assessment
Project Highclere Cable Lay and Operation	2022/09203		Completed
Ridley Magnetite Project	2023/09477		Referral Decision
Single Jetty Deep Water Port Renewable Hub, WA	2021/8942		Assessment

Title of referral	Reference	Referral Outcome	Assessment Status
Winu Copper and Gold Mine (Winu Project)	2024/09804		Completed
Action clearly unacceptable			
Asian Renewable Energy Hub Revised Proposal, WA	2021/8891	Action Clearly Unacceptable	Completed
Highlands 3D Marine Seismic Survey	2012/6680	Action Clearly Unacceptable	Completed
Controlled action			
'Van Gogh' Petroleum Field Development	2007/3213	Controlled Action	Post-Approval
Additional Rail Infrastructure between Herb Elliott Port Facility and Cloudbreak Mine Site	2010/5513	Controlled Action	Post-Approval
Ammonium Nitrate Project	2010/5423	Controlled Action	Completed
Anketell Point Iron Ore Processing & Export Port	2009/5120	Controlled Action	Post-Approval
Asian Renewable Energy Hub, 220 km east of Port Hedland, Western Australia	2017/8112	Controlled Action	Post-Approval
Balmoral South Iron Ore Mine	2008/4236	Controlled Action	Post-Approval
Binowee Iron Ore Project	2001/366	Controlled Action	Proposed Decision
Burrup North East Sand Mining Project	2008/4611	Controlled Action	Completed
Cape Lambert Port B Development	2008/4032	Controlled Action	Post-Approval
Construct and operate LNG & domestic gas plant including onshore and offshore facilities - Wheatston	2008/4469	Controlled Action	Post-Approval
Construction and operation of a Solar Salt Project, SW Onslow, WA	2016/7793	Controlled Action	Assessment Approach
Develop Jansz-Io deepwater gas field in Permit Areas WA-18-R, WA-25-R and WA-26-	2005/2184	Controlled Action	Post-Approval
Development of Angel gas and condensate field, North West Shelf	2004/1805	Controlled Action	Post-Approval
Development of an iron ore mine and associated infrastructure	2010/5630	Controlled Action	Assessment Approach

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Development of Browse Basin Gas Fields (Upstream)	2008/4111	Controlled Action	Completed
Development of Coniston/Novara fields within the Exmouth Sub-basin	2011/5995	Controlled Action	Post-Approval
Development of Stybarrow petroleum field incl drilling and facility installation	2004/1469	Controlled Action	Post-Approval
Duplication of the Dampier Highway Stages 2 & 6	2010/5419	Controlled Action	Post-Approval
Echo-Yodel Production Wells	2000/11	Controlled Action	Post-Approval
Enfield full field development	2001/257	Controlled Action	Post-Approval
Equus Gas Fields Development Project, Carnarvon Basin	2012/6301	Controlled Action	Completed
Eramurra Industrial Salt Project	2021/9027	Controlled Action	Assessment Approach
Eramurra Industrial Salt Project, near Karratha, WA	2019/8448	Controlled Action	Completed
Gorgon Gas Development 4th Train Proposal	2011/5942	Controlled Action	Post-Approval
Gorgon Gas Revised Development	2008/4178	Controlled Action	Post-Approval
Greater Enfield (Vincent) Development	2005/2110	Controlled Action	Post-Approval
Greater Gorgon Development - Optical Fibre Cable, Mainland to Barrow Island	2005/2141	Controlled Action	Completed
Great Northern Pipeline - 630 km buried gas pipeline	2009/5257	Controlled Action	Completed
Learmonth Bundle Site and Launchway, WA	2017/8079	Controlled Action	Completed
Light Crude Oil Production	2001/365	Controlled Action	Post-Approval
Mardie Project, 80 km south west of Karratha, WA	2018/8236	Controlled Action	Post-Approval
North Star Magnetite Project	2012/6689	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
North West Shelf Gas Venture Phase VI Expansion	2007/3436	Controlled Action	Referral Decision
Perdaman Urea Project, near Karratha, WA	2018/8383	Controlled Action	Post-Approval
Pluto Gas Project	2005/2258	Controlled Action	Completed
Pluto Gas Project Including Site B	2006/2968	Controlled Action	Post-Approval
Port Hedland Outer Harbour Development and associated marine and terrestrial in	2008/4159	Controlled Action	Post-Approval
Port Hedland Spoilbank Marina, WA	2019/8520	Controlled Action	Post-Approval
Proposed technical ammonium nitrate production facility	2008/4546	Controlled Action	Post-Approval
Proposed West Pilbara Iron Ore Project	2009/4706	Controlled Action	Post-Approval
Pyrenees Oil Fields Development	2005/2034	Controlled Action	Post-Approval
Simpson Development	2000/59	Controlled Action	Completed
Simpson Oil Field Development	2001/227	Controlled Action	Post-Approval
site preparations	2005/2391	Controlled Action	Post-Approval
The Scarborough Project - FLNG & assoc subsea infrastructure, Carnarvon Basin	2013/6811	Controlled Action	Post-Approval
Vincent Appraisal Well	2000/22	Controlled Action	Post-Approval
Widening and resurfacing two principal roads servicing the Dampier Port Authori	2010/5677	Controlled Action	Completed
Yannarie Solar Salt Project	2004/1679	Controlled Action	Completed
Yardie Creek Road Realignment Project	2021/8967	Controlled Action	Assessment Approach
Not controlled action			
'Goodwyn A' Low Pressure Train Project	2003/914	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
'Van Gogh' Oil Appraisal Drilling Program, Exploration Permit Area WA-155-P(1)	2006/3148	Not Controlled Action	Completed
Airlie Island soil and groundwater investigations, Exmouth Gulf, offshore Pilbara coast	2014/7250	Not Controlled Action	Completed
Ammonia Plant	2001/199	Not Controlled Action	Completed
Baniyas-1 Exploration Well, EP-424, near Onslow	2007/3282	Not Controlled Action	Completed
Barrow Island 2D Seismic survey	2006/2667	Not Controlled Action	Completed
Bollinger 2D Seismic Survey 200km North of North West Cape WA	2004/1868	Not Controlled Action	Completed
Bultaco-2, Laverda-2, Laverda-3 and Montesa-2 Appraisal Wells	2000/103	Not Controlled Action	Completed
Cape Lambert Port A Marine Structures Refurbishment Project	2018/8370	Not Controlled Action	Completed
Carnarvon 3D Marine Seismic Survey	2004/1890	Not Controlled Action	Completed
Cazadores 2D seismic survey	2004/1720	Not Controlled Action	Completed
Construct 110km buried natural gas pipeline from Onslow, connecting to Dampier/Bunbury natural gas p	2013/7039	Not Controlled Action	Completed
Construction and operation of an unmanned sea platform and connecting pipeline to Varanus Island for	2004/1703	Not Controlled Action	Completed
Construction of a Commodities Berth, Wharf and Associated Infrastructure	2008/4129	Not Controlled Action	Completed
Construction of Loadout Facility and Laydown Area	2002/598	Not Controlled Action	Completed
Controlled Source Electromagnetic Survey	2007/3262	Not Controlled Action	Completed
Deep Gorge Boardwalk, Murujuga National Park, WA	2018/8283	Not Controlled Action	Completed
Development of Halyard Field off the west coast of WA	2010/5611	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Development of Industrial Land, Port of Dampier	2003/1293	Not Controlled Action	Completed
Development of iron ore facilities	2013/7013	Not Controlled Action	Completed
Development of iron ore resources in eastern Pilbara region, including port at P	2004/1562	Not Controlled Action	Completed
Differential Global Positioning System (DGPS)	2001/445	Not Controlled Action	Completed
Dimethyl ether plant	2001/509	Not Controlled Action	Completed
Drilling of an exploration well Gats-1 in Permit Area WA-261-P	2004/1701	Not Controlled Action	Completed
Eagle-1 Exploration Drilling, North West Shelf, WA	2019/8578	Not Controlled Action	Completed
Echo A Development WA-23-L, WA-24-L	2005/2042	Not Controlled Action	Completed
Expansion of the Sino Iron Ore Mine and export facilities, Cape Preston, WA	2017/7862	Not Controlled Action	Completed
Expansion Proposal, Mineralogy Cape Preston Iron Ore Project, Cape Preston, WA	2009/5010	Not Controlled Action	Completed
Exploration drilling well WA-155-P(1)	2003/971	Not Controlled Action	Completed
Exploration of appraisal wells	2006/3065	Not Controlled Action	Completed
Exploration Well (Taunton-2)	2002/731	Not Controlled Action	Completed
Exploration Well in Permit Area WA-155-P(1)	2002/759	Not Controlled Action	Completed
Exploratory drilling in permit area WA-225-P	2001/490	Not Controlled Action	Completed
Extension of Simpson Oil Platforms & Wells	2002/685	Not Controlled Action	Completed
Gulf Fishing Lodge	2010/5499	Not Controlled Action	Completed
HCA05X Macedon Experimental Survey	2004/1926	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Hess Exploration Drilling Programme	2007/3566	Not Controlled Action	Completed
Horizon Power South Hedland Transmission Line, WA	2012/6551	Not Controlled Action	Completed
Huascaran-1 exploration well (WA-292-P)	2001/539	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
INDIGO West Submarine Telecommunications Cable, WA	2017/8126	Not Controlled Action	Completed
Infill Production Well (Griffin-9)	2001/417	Not Controlled Action	Completed
Iron Bridge Port Facility, Port Hedland, WA	2015/7565	Not Controlled Action	Completed
Jansz-2 and 3 Appraisal Wells	2002/754	Not Controlled Action	Completed
King Bay East Rock Quarry & Industrial Estate Development	2003/1150	Not Controlled Action	Completed
Klammer 2D Seismic Survey	2002/868	Not Controlled Action	Completed
Mahimahi Aquaculture Facility	2002/891	Not Controlled Action	Completed
Maia-Gaea Exploration wells	2000/17	Not Controlled Action	Completed
Manaslu - 1 and Huascaran - 1 Offshore Exploration Wells	2001/235	Not Controlled Action	Completed
Mermaid Marine Australia Desalination Project	2011/5916	Not Controlled Action	Completed
Methanol manufacturing	2001/528	Not Controlled Action	Completed
Methanol plant	2001/521	Not Controlled Action	Completed
Montesa-1 and Bultaco-1 Exploration Wells	2000/102	Not Controlled Action	Completed
Murujuga archaeological excavation, collection and sampling, Dampier Archipelago, WA	2014/7160	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
North Rankin B gas compression facility	2005/2500	Not Controlled Action	Completed
Onslow Power Infrastructure Upgrade Project, Onslow, WA	2014/7314	Not Controlled Action	Completed
Onslow Water Supply Infrastructure Upgrade Project, Onslow, WA	2014/7329	Not Controlled Action	Completed
Pilbara Bulk Ore Transport System Project, WA	2016/7637	Not Controlled Action	Completed
Pipeline System Modifications Project	2000/3	Not Controlled Action	Completed
Pluto-North West Shelf Interconnector, Burrup Peninsula, WA	2018/8353	Not Controlled Action	Completed
Port Expansion and Dredging	2003/1265	Not Controlled Action	Completed
Port Hedland Channel Risk and Optimisation Project, WA	2017/7915	Not Controlled Action	Completed
Project Highclere Geophysical Survey	2021/9023	Not Controlled Action	Completed
Rail and Port Facilities	2001/474	Not Controlled Action	Completed
Searipple gas and condensate field development	2000/89	Not Controlled Action	Completed
Spool Base Facility	2001/263	Not Controlled Action	Completed
Stages 1 & 2 Port of Dampier Security Upgrade & Associated Works	2004/1751	Not Controlled Action	Completed
Subsea Gas Pipeline From Stybarrow Field to Griffin Venture Gas Export Pipeline	2005/2033	Not Controlled Action	Completed
sub-sea tieback of Perseus field wells	2004/1326	Not Controlled Action	Completed
Telfer Gold Mine Project - Mine and Borefield Extensions and Upgrade of Storage	2002/787	Not Controlled Action	Completed
Telstra North Rankin Spur Fibre Optic Cable	2016/7836	Not Controlled Action	Completed
Thevenard Island Retirement Project	2015/7423	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
To construct and operate an offshore submarine fibre optic cable, WA	2014/7373	Not Controlled Action	Completed
WA-295-P Kerr-McGee Exploration Wells	2001/152	Not Controlled Action	Completed
Walkway Lighting Upgrade	2009/4965	Not Controlled Action	Completed
Wanda Offshore Research Project, 80 km north-east of Exmouth, WA	2018/8293	Not Controlled Action	Completed
Western Flank Gas Development	2005/2464	Not Controlled Action	Completed
Wheatstone 3D seismic survey, 70km north of Barrow Island	2004/1761	Not Controlled Action	Completed
Widening of MOF Road	2005/2305	Not Controlled Action	Completed
Woodside Project Facilities Increase	2006/3191	Not Controlled Action	Completed
Not controlled action (particular manner)			
'Kate' 3D marine seismic survey, exploration permits WA-320-P and WA-345-P, 60km	2005/2037	Not Controlled Action (Particular Manner)	Post-Approval
'Tourmaline' 2D marine seismic survey, permit areas WA-323-P, WA-330-P and WA-32	2005/2282	Not Controlled Action (Particular Manner)	Post-Approval
"Leanne" offshore 3D seismic exploration, WA-356-P	2005/1938	Not Controlled Action (Particular Manner)	Post-Approval
2D and 3D seismic surveys	2005/2151	Not Controlled Action (Particular Manner)	Post-Approval
2D marine seismic survey	2012/6296	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic Survey	2005/2146	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic Survey Permit Area WA-352-P	2008/4628	Not Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		(Particular Manner)	
2D seismic survey within permit WA-291	2007/3265	Not Controlled Action (Particular Manner)	Post-Approval
3D marine seismic survey	2008/4281	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey (WA-482-P, WA-363-P), WA	2013/6761	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey in Permit Areas WA-15-R, WA-18-R, WA-205-P, WA-253-P, WA-267-P and WA-268-P	2003/1271	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey in WA 457-P & WA 458-P, North West Shelf, offshore WA	2013/6862	Not Controlled Action (Particular Manner)	Post-Approval
3D marine seismic survey over petroleum title WA-268-P	2007/3458	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Surveys - Contos CT-13 & Supertubes CT-13, offshore WA	2013/6901	Not Controlled Action (Particular Manner)	Post-Approval
3D seismic survey	2006/2715	Not Controlled Action (Particular Manner)	Post-Approval
3D Seismic Survey, WA	2008/4428	Not Controlled Action (Particular Manner)	Post-Approval
3D sesmic survey	2006/2781	Not Controlled Action (Particular Manner)	Post-Approval
Acheron Non-Exclusive 2D Seismic Survey	2009/4968	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Acheron Non-Exclusive 2D Seismic Survey	2008/4565	Not Controlled Action (Particular Manner)	Post-Approval
Additional Rail Infrastructure	2012/6314	Not Controlled Action (Particular Manner)	Post-Approval
Agrippina 3D Seismic Marine Survey	2009/5212	Not Controlled Action (Particular Manner)	Post-Approval
Algae Farm and Processing Facilities	2012/6596	Not Controlled Action (Particular Manner)	Post-Approval
Ammonia Plant, Murujuga Burrup Peninsula - Renewable Hydrogen Project	2020/8739	Not Controlled Action (Particular Manner)	Post-Approval
Apache Northwest Shelf Van Gogh Field Appraisal Drilling Program	2007/3495	Not Controlled Action (Particular Manner)	Post-Approval
Aperio 3D Marine Seismic Survey, WA	2012/6648	Not Controlled Action (Particular Manner)	Post-Approval
Artemis-1 Drilling Program (WA-360-P)	2010/5432	Not Controlled Action (Particular Manner)	Post-Approval
Australia to Singapore Fibre Optic Submarine Cable System	2011/6127	Not Controlled Action (Particular Manner)	Post-Approval
Balnaves Condensate Field Development	2011/6188	Not Controlled Action (Particular Manner)	Post-Approval
Bonaventure 3D seismic survey	2006/2514	Not Controlled Action (Particular Manner)	Post-Approval
Cable Seismic Exploration Permit areas WA-323-P and WA-330-P	2008/4227	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Cape Preston East - Iron Ore Export Facilities, Pilbara, WA	2013/6844	Not Controlled Action (Particular Manner)	Post-Approval
Cerberus exploration drilling campaign, Carnarvon Basin, WA	2016/7645	Not Controlled Action (Particular Manner)	Post-Approval
CGGVERITAS 2010 2D Seismic Survey	2010/5714	Not Controlled Action (Particular Manner)	Post-Approval
Charon 3D Marine Seismic Survey	2007/3477	Not Controlled Action (Particular Manner)	Post-Approval
Consturction & operation of the Varanus Island kitchen & mess cyclone refuge building, compression p	2013/6952	Not Controlled Action (Particular Manner)	Post-Approval
Coverack Marine Seismic Survey	2001/399	Not Controlled Action (Particular Manner)	Post-Approval
Cue Seismic Survey within WA-359-P, WA-361-P and WA-360-P	2007/3647	Not Controlled Action (Particular Manner)	Post-Approval
CVG 3D Marine Seismic Survey	2012/6654	Not Controlled Action (Particular Manner)	Post-Approval
Dampier Marine Services Facility including 300m Wharf and Dredging Works	2009/5108	Not Controlled Action (Particular Manner)	Post-Approval
Decommissioning of the Legendre facilities	2010/5681	Not Controlled Action (Particular Manner)	Post-Approval
Deep Water Drilling Program	2010/5532	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Demeter 3D Seismic Survey, off Dampier, WA	2002/900	Not Controlled Action (Particular Manner)	Post-Approval
Diesel Fuel Bunker Operation	2012/6289	Not Controlled Action (Particular Manner)	Post-Approval
Draeck 3D Marine Seismic Survey, WA-205-P	2006/3067	Not Controlled Action (Particular Manner)	Post-Approval
Dredging of marine sediment to enable construction of eight berths and a turnin	2010/5678	Not Controlled Action (Particular Manner)	Post-Approval
Drilling 35-40 offshore exploration wells in deep water	2008/4461	Not Controlled Action (Particular Manner)	Post-Approval
Earthworks for kitchen/mess, cyclone refuge building & Compression Plant, Varanus Island	2013/6900	Not Controlled Action (Particular Manner)	Post-Approval
Eendracht Multi-Client 3D Marine Seismic Survey	2009/4749	Not Controlled Action (Particular Manner)	Post-Approval
Effect of marine seismic sounds to demersal fish and pearl oysters, north-west WA	2018/8169	Not Controlled Action (Particular Manner)	Post-Approval
Enfield M3 & Vincent 4D Marine Seismic Surveys	2008/3981	Not Controlled Action (Particular Manner)	Completed
Enfield M3 4D, Vincent 4D & 4D Line Test Marine Seismic Surveys	2008/4122	Not Controlled Action (Particular Manner)	Post-Approval
Enfield M4 4D Marine Seismic Survey	2008/4558	Not Controlled Action (Particular Manner)	Post-Approval
Enfield oilfield 3D Seismic Survey	2006/3132	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Exmouth West 2D Marine Seismic Survey	2008/4132	Not Controlled Action (Particular Manner)	Post-Approval
Exploration drilling of Zeus-1 well	2008/4351	Not Controlled Action (Particular Manner)	Post-Approval
Fletcher-Finucane Development, WA26-L and WA191-P	2011/6123	Not Controlled Action (Particular Manner)	Post-Approval
Foxhound 3D Non-Exclusive Marine Seismic Survey	2009/4703	Not Controlled Action (Particular Manner)	Post-Approval
Gazelle 3D Marine Seismic Survey in WA-399-P and WA-42-L	2010/5570	Not Controlled Action (Particular Manner)	Post-Approval
Geco Eagle 3D Marine Seismic Survey	2008/3958	Not Controlled Action (Particular Manner)	Post-Approval
Glencoe 3D Marine Seismic Survey WA-390-P	2007/3684	Not Controlled Action (Particular Manner)	Post-Approval
Greater Western Flank Phase 1 gas Development	2011/5980	Not Controlled Action (Particular Manner)	Post-Approval
Grimalkin 3D Seismic Survey	2008/4523	Not Controlled Action (Particular Manner)	Post-Approval
Guacamole 2D Marine Seismic Survey	2008/4381	Not Controlled Action (Particular Manner)	Post-Approval
Harmony 3D Marine Seismic Survey	2012/6699	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Harpy 1 exploration well	2001/183	Not Controlled Action (Particular Manner)	Post-Approval
Honeycombs MC3D Marine Seismic Survey	2012/6368	Not Controlled Action (Particular Manner)	Post-Approval
Huzzas MC3D Marine Seismic Survey (HZ-13) Carnarvon Basin, offshore WA	2013/7003	Not Controlled Action (Particular Manner)	Post-Approval
Huzzas phase 2 marine seismic survey, Exmouth Plateau, Northern Carnarvon Basin, WA	2013/7093	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
John Ross & Rosella Off Bottom Cable Seismic Exploration Program	2008/3966	Not Controlled Action (Particular Manner)	Post-Approval
Judo Marine 3D Seismic Survey within and adjacent to WA-412-P	2008/4630	Not Controlled Action (Particular Manner)	Post-Approval
Judo Marine 3D Seismic Survey within and adjacent to WA-412-P	2009/4801	Not Controlled Action (Particular Manner)	Post-Approval
Julimar Brunello Gas Development Project	2011/5936	Not Controlled Action (Particular Manner)	Post-Approval
Klimt 2D Marine Seismic Survey	2007/3856	Not Controlled Action (Particular Manner)	Post-Approval
Laverda 3D Marine Seismic Survey and Vincent M1 4D Marine Seismic Survey	2010/5415	Not Controlled Action (Particular Manner)	Post-Approval
Leopard 2D marine seismic survey	2005/2290	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Lion 2D Marine Seismic Survey	2007/3777	Not Controlled Action (Particular Manner)	Post-Approval
Macedon Gas Field Development	2008/4605	Not Controlled Action (Particular Manner)	Post-Approval
Marine Geotechnical Drilling Program	2008/4012	Not Controlled Action (Particular Manner)	Post-Approval
Marine reconnaissance survey	2008/4466	Not Controlled Action (Particular Manner)	Post-Approval
Millstream 20GL Pipeline, Bungaroo, Borefield Integration	2012/6379	Not Controlled Action (Particular Manner)	Post-Approval
MOF Road Widening and Resurfacing Works	2011/5843	Not Controlled Action (Particular Manner)	Post-Approval
Moosehead 2D seismic survey within permit WA-192-P	2005/2167	Not Controlled Action (Particular Manner)	Post-Approval
Munmorah 2D seismic survey within permits WA-308/9-P	2003/970	Not Controlled Action (Particular Manner)	Post-Approval
Nelson Point Dredging	2009/4920	Not Controlled Action (Particular Manner)	Post-Approval
Nickol Bay Quarry Eastern Extension Proposal, Burrup Peninsula, WA	2013/6915	Not Controlled Action (Particular Manner)	Post-Approval
Ocean Bottom Cable Seismic Program, WA-264-P	2007/3844	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Ocean Bottom Cable Seismic Survey	2005/2017	Not Controlled Action (Particular Manner)	Post-Approval
Offshore Canning Multi Client 2D Marine Seismic Survey	2010/5393	Not Controlled Action (Particular Manner)	Post-Approval
Offshore Drilling Campaign	2011/5830	Not Controlled Action (Particular Manner)	Post-Approval
Offshore Fibre Optic Cable Network Construction & Operation, Port Hedland WA to Darwin NT	2014/7223	Not Controlled Action (Particular Manner)	Post-Approval
Onslow Seawater Desalination Plant Marine Geophysical Investigation	2020/8794	Not Controlled Action (Particular Manner)	Post-Approval
Orcus 3D Marine Seismic Survey in WA-450-P	2010/5723	Not Controlled Action (Particular Manner)	Post-Approval
Osprey and Dionysus Marine Seismic Survey	2011/6215	Not Controlled Action (Particular Manner)	Post-Approval
Palta-1 exploration well in Petroleum Permit Area WA-384-P	2011/5871	Not Controlled Action (Particular Manner)	Post-Approval
Phoenix 3D Seismic Survey, Bedout Sub-Basin	2010/5360	Not Controlled Action (Particular Manner)	Post-Approval
Pomodoro 3D Marine Seismic Survey in WA-426-P and WA-427-P	2010/5472	Not Controlled Action (Particular Manner)	Post-Approval
Port Headland Outer Harbour Pre-construction Pilling program	2012/6341	Not Controlled Action (Particular Manner)	Post-Approval
Port of Port Hedland channel marker replacement project, WA	2017/8010	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Port Walcott upgrade, dredging & spoil disposal, & channel realignment	2006/2806	Not Controlled Action (Particular Manner)	Post-Approval
Pyrenees 4D Marine Seismic Monitor Survey, HCA12A	2012/6579	Not Controlled Action (Particular Manner)	Post-Approval
Pyrenees-Macedon 3D marine seismic survey	2005/2325	Not Controlled Action (Particular Manner)	Post-Approval
Quiberon 2D Seismic Survey, permit area WA-385P, offshore of Carnarvon	2009/5077	Not Controlled Action (Particular Manner)	Post-Approval
Realignment of the Great Northern Highway	2010/5793	Not Controlled Action (Particular Manner)	Post-Approval
Reindeer gas reservior development, Devil Creek, Carnarvon Basin - WA	2007/3917	Not Controlled Action (Particular Manner)	Post-Approval
Repsol 3d & 2D Marine Seismic Survey	2012/6658	Not Controlled Action (Particular Manner)	Post-Approval
Rose 3D Seismic Program	2008/4239	Not Controlled Action (Particular Manner)	Post-Approval
Rydal-1 Petroleum Exploration Well, WA	2012/6522	Not Controlled Action (Particular Manner)	Post-Approval
Salsa 3D Marine Seismic Survey	2010/5629	Not Controlled Action (Particular Manner)	Post-Approval
Santos Winchester three dimensional seismic survey - WA-323-P & WA-330-P	2011/6107	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Scarborough Development nearshore component, NWS, WA	2018/8362	Not Controlled Action (Particular Manner)	Post-Approval
Skorpion Marine Seismic Survey WA	2001/416	Not Controlled Action (Particular Manner)	Post-Approval
Sovereign 3D Marine Seismic Survey	2011/5861	Not Controlled Action (Particular Manner)	Post-Approval
Stag 4D & Reindeer MAZ Marine Seismic Surveys, WA	2013/7080	Not Controlled Action (Particular Manner)	Post-Approval
Stag Off-bottom Cable Seismic Survey	2007/3696	Not Controlled Action (Particular Manner)	Post-Approval
Stybarrow 4D Marine Seismic Survey	2011/5810	Not Controlled Action (Particular Manner)	Post-Approval
Stybarrow Baseline 4D marine seismic survey	2008/4530	Not Controlled Action (Particular Manner)	Post-Approval
Tantabiddi Boat Ramp Sand Bypassing	2015/7411	Not Controlled Action (Particular Manner)	Post-Approval
The Dampier Heavy Load Out Facility Berth and Swing Basin Expansion	2012/6271	Not Controlled Action (Particular Manner)	Post-Approval
Tidepole Maz 3D Seismic Survey Campaign	2007/3706	Not Controlled Action (Particular Manner)	Post-Approval
Tortilla 2D Seismic Survey, WA	2011/6110	Not Controlled Action (Particular Manner)	Post-Approval
Triton 3D Marine Seismic Survey, WA-2-R and WA-3-R	2006/2609	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Undertake a 3D marine seismic survey	2010/5695	Not Controlled Action (Particular Manner)	Post-Approval
Undertake a three dimensional marine seismic survey	2010/5679	Not Controlled Action (Particular Manner)	Post-Approval
Undertake a three dimensional marine seismic survey	2010/5715	Not Controlled Action (Particular Manner)	Post-Approval
upgrade of 3 community recreation sites	2005/2349	Not Controlled Action (Particular Manner)	Post-Approval
Vincent M1 and Enfield M5 4D Marine Seismic Survey	2010/5720	Not Controlled Action (Particular Manner)	Post-Approval
Warramunga Non-Inclusive 3D Seismic Survey	2008/4553	Not Controlled Action (Particular Manner)	Post-Approval
West Anchor 3D Marine Seismic Survey	2008/4507	Not Controlled Action (Particular Manner)	Post-Approval
West Panaeus 3D seismic survey	2006/3141	Not Controlled Action (Particular Manner)	Post-Approval
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval
Wheatstone 3D MAZ Marine Seismic Survey	2011/6058	Not Controlled Action (Particular Manner)	Post-Approval
Wheatstone Iago Appraisal Well Drilling	2008/4134	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Wheatstone Iago Appraisal Well Drilling	2007/3941	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
3D Marine Seismic Survey in the offshore northwest Carnarvon Basin	2011/6175	Referral Decision	Completed
3D Seismic Survey	2008/4219	Referral Decision	Completed
Bianchi 3D Marine Seismic Survey, Carnavon Basin, WA	2013/7078	Referral Decision	Completed
construction of a new loadout facility and associated laydown area south of the	2002/579	Referral Decision	Completed
CVG 3D Marine Seismic Survey	2012/6270	Referral Decision	Completed
Enfield 4D Marine Seismic Surveys, Production Permit WA-28-L	2005/2370	Referral Decision	Completed
Mardie Salt Project, Pilbara region, WA	2018/8183	Referral Decision	Completed
Outer Harbour Development and associated marine and terrestial infrastructure	2008/4148	Referral Decision	Completed
Relocation of 2 heritage sites to National Heritage Place	2010/5709	Referral Decision	Completed
Rose 3D Seismic acquisition survey	2008/4220	Referral Decision	Completed
Stybarrow Baseline 4D Marine Seismic Survey (Permit Areas WA-255-P, WA-32-L, WA-	2008/4165	Referral Decision	Completed
Two Dimensional Transition Zone Seismic Survey - TP/7 (R1)	2010/5507	Referral Decision	Completed
Varanus Island Compression Project	2012/6698	Referral Decision	Completed

Key Ecological Features [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

Name	Region
Ancient coastline at 125 m depth contour	North-west
Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula	North-west
Commonwealth waters adjacent to Ningaloo Reef	North-west
Continental Slope Demersal Fish Communities	North-west
Exmouth Plateau	North-west
Glomar Shoals	North-west

Biologically Important Areas		[Resource Information]
Scientific Name	Behaviour	Presence
Dugong		
Dugong dugon Dugong [28]	Foraging	Known to occur
Dugong dugon Dugong [28]	Reproduction	Known to occur
Marine Turtles		
Caretta caretta Loggerhead Turtle [1763]	Foraging	Known to occur
Caretta caretta Loggerhead Turtle [1763]	Reproduction	Low density
Chelonia mydas Green Turtle [1765]	Foraging	Known to occur
Chelonia mydas Green Turtle [1765]	Migration	Known to occur
Chelonia mydas Green Turtle [1765]	Reproduction	Likely to occur
Chelonia mydas Green Turtle [1765]	Resting	Known to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Foraging	Likely to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Migration	Known to occur

Scientific Name	Behaviour	Presence
Eretmochelys imbricata Hawksbill Turtle [1766]	Reproduction	Known to occur
Natator depressus Flatback Turtle [59257]	Foraging	Known to occur
Natator depressus Flatback Turtle [59257]	Migration	Known to occur
Natator depressus Flatback Turtle [59257]	Reproduction	Known to occur
River shark		
Pristis clavata Dwarf Sawfish [68447]	Foraging	Known to occur
Pristis clavata Dwarf Sawfish [68447]	Reproduction	Known to occur
Pristis pristis Largetooth Sawfish [60756]	Foraging	Known to occur
Pristis pristis Largetooth Sawfish [60756]	Reproduction	Known to occur
Pristis zijsron Green Sawfish [68442]	Foraging	Known to occur
Pristis zijsron Green Sawfish [68442]	Reproduction	Known to occur
Seabirds		
Ardenna pacifica Wedge-tailed Shearwater [84292]	Reproduction	Known to occur
Fregata ariel Lesser Frigatebird [1012]	Reproduction	Known to occur
Phaethon lepturus White-tailed Tropicbird [1014]	Reproduction	Known to occur
Sterna dougallii Roseate Tern [817]	Reproduction	Known to occur

Scientific Name	Behaviour	Presence
Sternula albifrons sinensis Little Tern [82850]	Reproduction	Known to occur
Sternula nereis Fairy Tern [82949]	Reproduction	Known to occur
Sula leucogaster Brown Booby [1022]	Reproduction	Known to occur
Thalasseus bengalensis Lesser Crested Tern [66546]	Reproduction	Known to occur
Sharks		
Rhincodon typus Whale Shark [66680]	Foraging	Known to occur
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging	Likely to be present
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Migration	Known to occur
Eubalaena australis Southern Right Whale [40]	Migration	
Eubalaena australis Southern Right Whale [40]	Reproduction	
Megaptera novaeangliae Humpback Whale [38]	Migration	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Resting	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 is 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 on the contents of this report.

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 point locations and environmental data layers.

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 when time permits.

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 breeding sites; and
- 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.

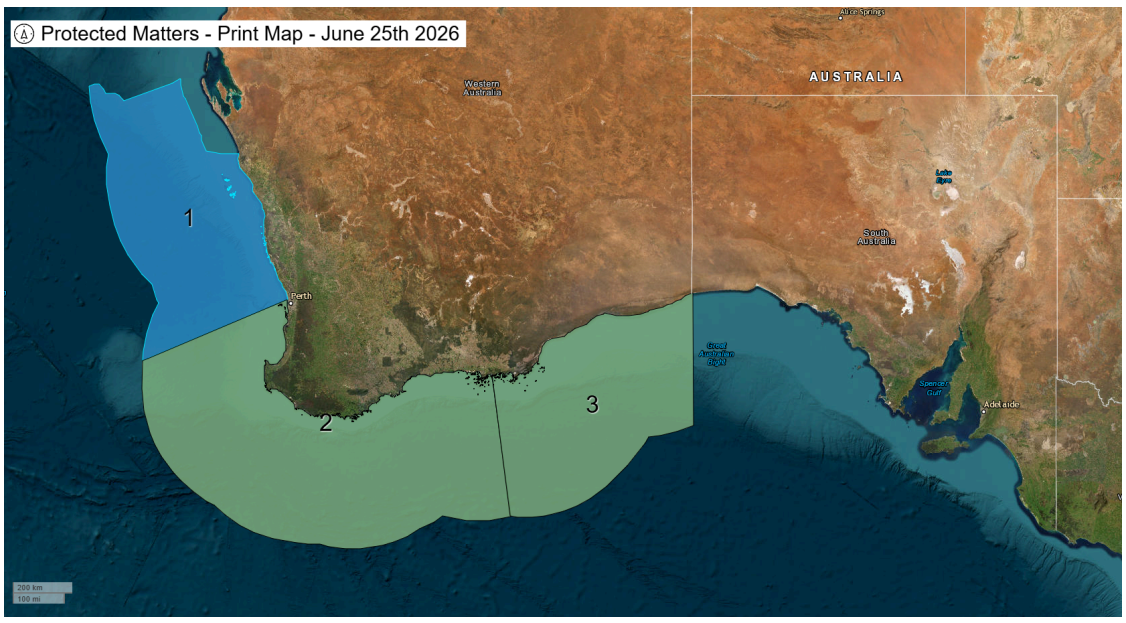


Figure 1: South West Marine Region - North (Part 1)

Report created: 25-Jun-2026

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Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	3
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	5
Listed Threatened Ecological Communities:	6
Listed Threatened Species:	112
Listed Migratory Species:	81

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	20
Commonwealth Heritage Places:	3
Listed Marine Species:	125
Whales and Other Cetaceans:	38
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	21
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	48
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	113
Key Ecological Features (Marine):	8
Biologically Important Areas:	23
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

National Heritage Places		[Resource Information]
Name	State	Legal Status
Historic		
HMAS Sydney II and HSK Kormoran Shipwreck Sites	EXT	Listed place
Batavia Shipwreck Site and Survivor Camps Area 1629 - Houtman Abrolhos	WA	Listed place
Natural		
Lesueur National Park	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)
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
Aquatic Root Mat Community in Caves of the Swan Coastal Plain	Endangered	Community known to occur within area
Banksia Woodlands of the Swan Coastal Plain ecological community	Endangered	Community likely to occur within area
Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion	Critically Endangered	Community likely to occur within area

Community Name	Threatened Category	Presence Text
Sedgelands in Holocene dune swales of the southern Swan Coastal Plain	Endangered	Community known to occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area
Tuart (Eucalyptus gomphocephala) Woodlands and Forests of the Swan Coastal Plain ecological community	Critically Endangered	Community likely to occur within area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat likely to occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting likely to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Calidris tenuirostris Great Knot [862]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Endangered	Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Phaethon rubricauda westralis Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird [91824]	Endangered	Species or species habitat likely to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Species or species habitat may occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Breeding likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area
Turnix varius scintillans Painted Button-quail (Houtman Abrolhos) [82451]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
[Xenus cinereus](#)		
Terek Sandpiper [59300]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[Zanda latirostris listed as Calyptorhynchus latirostris](#)		
Carnaby's Black Cockatoo, Short-billed Black-cockatoo [87737]	Endangered	Breeding likely to occur within area
FISH		
[Hoplostethus atlanticus](#)		
Orange Roughy, Deep-sea Perch, Red Roughy [68455]	Conservation Dependent	Species or species habitat likely to occur within area
[Nannatherina balstoni](#)		
Balston's Pygmy Perch [66698]	Vulnerable	Species or species habitat likely to occur within area
INSECT		
[Hesperocolletes douglasi](#)		
Douglas' Broad-headed Bee, Rottnest Bee [66734]	Critically Endangered	Species or species habitat may occur within area
MAMMAL		
[Balaenoptera borealis](#)		
Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[Balaenoptera musculus](#)		
Blue Whale [36]	Endangered	Migration route known to occur within area
[Balaenoptera physalus](#)		
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[Bettongia penicillata ogilbyi](#)		
Woylie [66844]	Endangered	Species or species habitat likely to occur within area
[Dasyurus geoffroii](#)		
Chuditch, Western Quoll [330]	Vulnerable	Translocated population known to occur within area

Scientific Name	Threatened Category	Presence Text
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding likely to occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Breeding known to occur within area
Parantechinus apicalis Dibbler [313]	Endangered	Translocated population known to occur within area
Petrogale lateralis lateralis Black-flanked Rock-wallaby, Mororong, Black-footed Rock Wallaby [66647]	Endangered	Species or species habitat likely to occur within area
Pseudocheirus occidentalis Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911]	Critically Endangered	Species or species habitat likely to occur within area
Setonix brachyurus Quokka [229]	Vulnerable	Species or species habitat likely to occur within area
PLANT		
Andersonia gracilis Slender Andersonia [14470]	Endangered	Species or species habitat likely to occur within area
Androcalva bivillosa Straggling Androcalva [87807]	Critically Endangered	Species or species habitat likely to occur within area
Anigozanthos viridis subsp. terraspectans Dwarf Green Kangaroo Paw [3435]	Vulnerable	Species or species habitat likely to occur within area
Banksia mimica Summer Honeypot [82765]	Endangered	Species or species habitat may occur within area
Beyeria lepidopetala Small-petalled Beyeria, Short-petalled Beyeria [18362]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Caladenia barbarella Small Dragon Orchid, Common Dragon Orchid [68686]	Endangered	Species or species habitat may occur within area
Caladenia bryceana subsp. cracens Northern Dwarf Spider-orchid [64556]	Vulnerable	Species or species habitat likely to occur within area
Caladenia elegans Elegant Spider-orchid [56775]	Endangered	Species or species habitat likely to occur within area
Caladenia hoffmanii Hoffman's Spider-orchid [56719]	Endangered	Species or species habitat likely to occur within area
Caleana dixonii listed as Paracaleana dixonii Sandplain Duck Orchid [87944]	Endangered	Species or species habitat likely to occur within area
Chorizema humile Prostrate Flame Pea [32573]	Endangered	Species or species habitat may occur within area
Chorizema varium Limestone Pea [16981]	Endangered	Species or species habitat likely to occur within area
Conostylis dielsii subsp. teres Irwin's Conostylis [3614]	Endangered	Species or species habitat may occur within area
Conostylis micrantha Small-flowered Conostylis [17635]	Endangered	Species or species habitat may occur within area
Diuris drummondii Tall Donkey Orchid [4365]	Vulnerable	Species or species habitat may occur within area
Diuris micrantha Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Diuris purdiei Purdie's Donkey-orchid [12950]	Endangered	Species or species habitat may occur within area
Drakaea concolor Kneeling Hammer-orchid [56777]	Vulnerable	Species or species habitat likely to occur within area
Drakaea elastica Glossy-leafed Hammer Orchid, Glossy-leaved Hammer Orchid, Warty Hammer Orchid [16753]	Endangered	Species or species habitat likely to occur within area
Drakaea micrantha Dwarf Hammer-orchid [56755]	Vulnerable	Species or species habitat may occur within area
Drummondita ericoides Morseby Range Drummondita [9193]	Endangered	Species or species habitat likely to occur within area
Eleocharis keigheryi Keighery's Eleocharis [64893]	Vulnerable	Species or species habitat likely to occur within area
Eucalyptus argutifolia Yanchep Mallee, Wabling Hill Mallee [24263]	Vulnerable	Species or species habitat likely to occur within area
Eucalyptus cuprea Mallee Box [56773]	Endangered	Species or species habitat likely to occur within area
Grevillea batrachioides Mt Lesueur Grevillea [21735]	Endangered	Species or species habitat may occur within area
Grevillea bracteosa subsp. howatharra [85002]	Critically Endangered	Species or species habitat likely to occur within area
Grevillea humifusa Spreading Grevillea [61182]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hemiandra gardneri Red Snakebush [7945]	Endangered	Species or species habitat likely to occur within area
Hypocalymma angustifolium subsp. Hutt River (S.Patrick 2982) [85023]	Endangered	Species or species habitat likely to occur within area
Lechenaultia chlorantha Kalbarri Leschenaultia [16763]	Vulnerable	Species or species habitat likely to occur within area
Macarthuria keigheryi Keighery's Macarthuria [64930]	Endangered	Species or species habitat may occur within area
Marianthus paralius [83925]	Endangered	Species or species habitat likely to occur within area
Melaleuca sp. Wanneroo (G.J.Keighery 16705) [89456]	Endangered	Species or species habitat likely to occur within area
Pterostylis sinuata Northampton Midget Greenhood, Western Swan Greenhood [84991]	Endangered	Species or species habitat likely to occur within area
Stachystemon nematophorus Three-flowered Stachystemon [81447]	Vulnerable	Species or species habitat likely to occur within area
Styphelia marginata listed as Leucopogon marginatus Thick-margined Leucopogon [91870]	Endangered	Species or species habitat likely to occur within area
Styphelia obtecta listed as Leucopogon obtectus Hidden Beard-heath [50758]	Endangered	Species or species habitat may occur within area
Thelymitra stellata Star Sun-orchid [7060]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
[Thelymitra variegata](#) Queen of Sheba [12582]	Critically Endangered	Species or species habitat may occur within area
[Wurmbea tubulosa](#) Long-flowered Nancy [12739]	Endangered	Species or species habitat may occur within area
REPTILE		
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
[Ctenotus lancelini](#) Lancelin Island Skink [1482]	Vulnerable	Translocated population known to occur within area
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
[Egernia stokesii badia](#) Western Spiny-tailed Skink, Baudin Island Spiny-tailed Skink [64483]	Endangered	Species or species habitat may occur within area
[Liopholis pulchra longicauda](#) Jurien Bay Skink, Jurien Bay Rock-skink [83162]	Vulnerable	Species or species habitat likely to occur within area
[Natator depressus](#) Flatback Turtle [59257]	Vulnerable	Breeding likely to occur within area
SHARK		
[Carcharias taurus (west coast population)](#) Grey Nurse Shark (west coast population) [68752]	Vulnerable	Congregation or aggregation likely to occur within area
[Carcharodon carcharias](#) White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Centrophorus uyato		
Little Gulper Shark [68446]	Conservation Dependent	Species or species habitat likely to occur within area
Galeorhinus galeus		
Tope, Flake, Oil Shark, School Shark [68453]	Conservation Dependent	Species or species habitat may occur within area
Pristis pristis		
Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat may occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sphyrna lewini		
Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area
SPIDER		
Idiosoma nigrum		
Shield-backed Trapdoor Spider, Black Rugose Trapdoor Spider [66798]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
null		
Balaenoptera omurai		
Omura's Whale [87136]		Species or species habitat likely to occur within area
Migratory Marine Birds		
Anous stolidus		
Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes		
Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Ardenna pacifica Wedge-tailed Shearwater [84292]		Breeding likely to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Hydroprogne caspia Caspian Tern [808]		Breeding likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Onychoprion anaethetus Bridled Tern [82845]		Breeding likely to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat may occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Sterna dougallii Roseate Tern [817]		Breeding likely to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Species or species habitat may occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
Migratory Marine Species		

Scientific Name	Threatened Category	Presence Text
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat likely to occur within area
Carcharias taurus Grey Nurse Shark [64469]		Congregation or aggregation likely to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Breeding likely to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat likely to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat likely 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 likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
[Pristis pristis](#) Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat may occur within area
[Rhincodon typus](#) Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
[Motacilla cinerea](#) Grey Wagtail [642]		Species or species habitat may occur within area
Migratory Wetlands Species		
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat likely to occur within area
[Arenaria interpres](#) Ruddy Turnstone [872]	Vulnerable	Roosting likely to occur within area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
[Calidris alba](#) Sanderling [875]		Roosting likely to occur within area
[Calidris canutus](#) Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat likely to occur within area
[Calidris ruficollis](#) Red-necked Stint [860]		Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
[Calidris tenuirostris](#) Great Knot [862]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[Charadrius bicinctus](#) Double-banded Plover [895]		Foraging, feeding or related behaviour likely to occur within area
[Charadrius leschenaultii](#) Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
[Charadrius mongolus](#) Lesser Sand Plover, Mongolian Plover [879]	Endangered	Foraging, feeding or related behaviour likely to occur within area
[Gallinago megala](#) Swinhoe's Snipe [864]		Roosting likely to occur within area
[Gallinago stenura](#) Pin-tailed Snipe [841]		Roosting likely to occur within area
[Limosa lapponica](#) Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
[Limosa limosa](#) Black-tailed Godwit [845]	Endangered	Foraging, feeding or related behaviour likely to occur within area
[Numenius madagascariensis](#) Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
[Numenius minutus](#) Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
[Numenius phaeopus](#) Whimbrel [849]		Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Phalaropus lobatus Red-necked Phalarope [838]		Foraging, feeding or related behaviour likely to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Foraging, feeding or related behaviour likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalasseus bergii Greater Crested Tern [83000]		Breeding likely to occur within area
Tringa brevipes Grey-tailed Tattler [851]		Foraging, feeding or related behaviour likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Foraging, feeding or related behaviour likely to occur within area
Tringa totanus Common Redshank, Redshank [835]		Foraging, feeding or related behaviour likely to occur within area
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Foraging, feeding or related behaviour 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
Australian Broadcasting Corporation	
Lot 3 P003065 [AGPR212]	WA
Australian Maritime Safety Authority	
Lot 2 S064031 [AGPR260]	WA
Lot 2 S064031 [AGPR261]	WA
Australian Postal Corporation	
Lot 1722 P167316 [AGPR7252]	WA
Department of Climate Change, Energy, the Environment and Water	
Geraldton Drill Hall Complex [CHL_105658]	WA
HMAS Sydney II and HSK Kormoran Shipwreck Sites [CHL_106062]	EXT
Lancelin Defence Training Area [CHL_105578]	WA
Department of Defence	
ANC TS MARMION - Hillarys [DD_3371]	WA
ANC TS Morrow - Geraldton [DD_0084]	WA
Geraldton Training Depot [DD_0705]	WA
Geraldton Training Depot [AGPR4445]	WA
Geraldton Training Depot [AGPR4444]	WA
Geraldton Training Depot [AGPR4446]	WA
Joondalup Training Depot [DD_1554]	WA
Lancelin Training Area [DD_0085]	WA
Lancelin Training Area [AGPR4486]	WA
Lancelin Training Area [AGPR4487]	WA
WA Offshore Training Area [DD_3034]	WA
Department of Home Affairs	
Lot 536 P044177 [AGPR6133]	WA
Lot 920 P057276 [AGPR4736]	WA

Commonwealth Heritage Places [Resource Information]

Name	State	Status
Historic		
Geraldton Drill Hall Complex	WA	Listed place
HMAS Sydney II and HSK Kormoran Shipwreck Sites	EXT	Listed place
Natural		
Lancelin Defence Training Area	WA	Listed place

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area 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 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 likely to occur within area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting likely to occur within area

Scientific Name	Threatened Category	Presence Text
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	Species or species habitat likely to occur within area
Calidris alba Sanderling [875]		Roosting likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area overfly marine area
Calidris ruficollis Red-necked Stint [860]		Foraging, feeding or related behaviour likely to occur within area overfly marine area
Calidris tenuirostris Great Knot [862]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area overfly marine area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Charadrius bicinctus Double-banded Plover [895]		Foraging, feeding or related behaviour likely to occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Foraging, feeding or related behaviour likely to occur within area overfly marine area
Chroicocephalus novaehollandiae as Larus novaehollandiae Silver Gull [82326]		Breeding likely to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Foraging, feeding or related behaviour likely to occur within area overfly marine area
Hydroprogne caspia as Sterna caspia Caspian Tern [808]		Breeding likely to occur within area
Larus pacificus Pacific Gull [811]		Breeding likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Foraging, feeding or related behaviour likely to occur within area overfly marine area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely 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 may occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area overfly marine area
Numenius phaeopus Whimbrel [849]		Foraging, feeding or related behaviour likely to occur within area
Onychoprion anaethetus as Sterna anaethetus Bridled Tern [82845]		Breeding likely to occur within area
Onychoprion fuscatus as Sterna fuscata Sooty Tern [90682]		Breeding likely to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Pelagodroma marina White-faced Storm-Petrel [1016]		Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat may occur within area
Phalacrocorax fuscescens Black-faced Cormorant [59660]		Breeding likely to occur within area
Phalaropus lobatus Red-necked Phalarope [838]		Foraging, feeding or related behaviour likely to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Foraging, feeding or related behaviour likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area overfly marine area
Pterodroma macroptera Great-winged Petrel [1035]		Foraging, feeding or related behaviour known to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text
Puffinus assimilis Little Shearwater [59363]		Foraging, feeding or related behaviour known to occur within area
Puffinus huttoni Hutton's Shearwater [1025]		Foraging, feeding or related behaviour likely to occur within area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Foraging, feeding or related behaviour likely 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 likely to occur within area
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Species or species habitat may occur within area
Sternula nereis as Sterna nereis Fairy Tern [82949]		Breeding likely 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

Scientific Name	Threatened Category	Presence Text
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
Thalasseus bergii as Sterna bergii Greater Crested Tern [83000]		Breeding likely to occur within area
Thinornis cucullatus as Thinornis rubricollis Hooded Plover, Hooded Dotterel [87735]		Species or species habitat likely to occur within area overfly marine area
Tringa brevipes as Heteroscelus brevipes Grey-tailed Tattler [851]		Foraging, feeding or related behaviour likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Foraging, feeding or related behaviour likely to occur within area overfly marine area
Tringa totanus Common Redshank, Redshank [835]		Foraging, feeding or related behaviour likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
[Xenus cinereus](#) Terek Sandpiper [59300]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area overfly marine area
Fish		
[Campichthys galei](#) Gale's Pipefish [66191]		Species or species habitat may occur within area
[Choeroichthys suillus](#) Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
[Festucalex scalaris](#) Ladder Pipefish [66216]		Species or species habitat may occur within area
[Filicampus tigris](#) Tiger Pipefish [66217]		Species or species habitat may occur within area
[Halicampus brocki](#) Brock's Pipefish [66219]		Species or species habitat may occur within area
[Haliichthys taeniophora as Haliichthys taeniophorus](#) Ribboned Pipehorse, Ribboned Pipefish, Ribboned Seadragon [94706]		Species or species habitat may occur within area
[Heraldia nocturna](#) Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
[Hippocampus angustus](#) Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
[Hippocampus breviceps](#) Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
[Hippocampus histrix](#) Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus subelongatus West Australian Seahorse [66722]		Species or species habitat may occur within area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
Histiogamphelus cristatus Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area
Idiotropiscis australe as Acentronura australe Southern Pygmy Pipehorse [74958]		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

Scientific Name	Threatened Category	Presence Text
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 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
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
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

Scientific Name	Threatened Category	Presence Text
[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]		Species or species habitat may occur within area
[Neophoca cinerea](#) Australian Sea-lion, Australian Sea Lion [22]	Endangered	Breeding known to occur within area
Reptile		
[Aipysurus laevis](#) Olive Sea Snake, Olive-brown Sea Snake [1120]		Species or species habitat may occur within area
[Aipysurus pooleorum](#) Shark Bay Sea Snake [66061]		Species or species habitat may occur within area
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
[Ephalophis greyae as Ephalophis greyi](#) Mangrove Sea Snake [93738]		Species or species habitat may occur within area
[Hydrophis kingii as Disteira kingii](#) Spectacled Sea Snake [93511]		Species or species habitat may occur within area
[Hydrophis major as Disteira major](#) Olive-headed Sea Snake [93512]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hydrophis platura as Pelamis platurus		
Yellow-bellied Sea Snake [93746]		Species or species habitat may occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Breeding likely 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 Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni		
Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera omurai		
Omura's Whale [87136]		Species or species habitat likely to occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Caperea marginata		
Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area

Current Scientific Name	Status	Type of Presence
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding likely to occur within area
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
Globicephala melas Long-finned Pilot Whale [59282]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Hyperoodon planifrons Southern Bottlenose Whale [71]		Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
Lagenodelphis hosei Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat likely to occur within area

Current Scientific Name	Status	Type of Presence
Lissodelphis peronii Southern Right Whale Dolphin [44]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area
Mesoplodon bowdoini Andrew's Beaked Whale [73]		Species or species habitat may occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Mesoplodon ginkgodens Gingko-toothed Beaked Whale, Gingko-toothed Whale, Gingko Beaked Whale [59564]		Species or species habitat may occur within area
Mesoplodon grayi Gray's Beaked Whale, Scamperdown Whale [75]		Species or species habitat may occur within area
Mesoplodon layardii Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale [25556]		Species or species habitat may occur within area
Mesoplodon mirus True's Beaked Whale [54]		Species or species habitat may occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks	[Resource Information]
Park Name	Zone & IUCN Categories
Abrolhos	Habitat Protection Zone (IUCN IV)
Perth Canyon	Habitat Protection Zone (IUCN IV)
Perth Canyon	Habitat Protection Zone (IUCN IV)
Perth Canyon	Habitat Protection Zone (IUCN IV)

Park Name	Zone & IUCN Categories
Abrolhos	Multiple Use Zone (IUCN VI)
Abrolhos	Multiple Use Zone (IUCN VI)
Abrolhos	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)
Two Rocks	Multiple Use Zone (IUCN VI)
Abrolhos	National Park Zone (IUCN II)
Abrolhos	National Park Zone (IUCN II)
Jurien	National Park Zone (IUCN II)
Perth Canyon	National Park Zone (IUCN II)
Perth Canyon	National Park Zone (IUCN II)
South-west Corner	National Park Zone (IUCN II)
Two Rocks	National Park Zone (IUCN II)
Abrolhos	Special Purpose Zone (IUCN VI)
Abrolhos	Special Purpose Zone (IUCN VI)
Jurien	Special Purpose Zone (IUCN VI)

Extra Information

State and Territory Reserves		[Resource Information]
Protected Area Name	Reserve Type	State
Beagle Islands	Nature Reserve	WA
Beekeepers	Nature Reserve	WA
Boullanger, Whitlock, Favourite, Tern And Osprey Islands	Nature Reserve	WA
Buller,Whittell & Green Islands	Nature Reserve	WA
Buller, Whittell And Green Islands	Nature Reserve	WA

Protected Area Name	Reserve Type	State
Cervantes Islands	Nature Reserve	WA
Dongara	Nature Reserve	WA
Drovers Cave	National Park	WA
Escape Island	Nature Reserve	WA
Essex Rocks	Nature Reserve	WA
Fisherman Islands	Nature Reserve	WA
Houtman Abrolhos Islands	National Park	WA
Jurien Bay	Marine Park	WA
Kalbarri	National Park	WA
Lancelin And Edwards Islands	Nature Reserve	WA
Lesueur	National Park	WA
Lipfert, Milligan, Etc Islands	Nature Reserve	WA
Marmion	Marine Park	WA
Nambung	National Park	WA
Neerabup	National Park	WA
Neerabup	Nature Reserve	WA
Nilgen	Nature Reserve	WA
Nilligarri	Nature Reserve	WA
Oakabella	Nature Reserve	WA
Outer Rocks	Nature Reserve	WA
Port Gregory	NRS Addition - Gazettal in Progress	WA
Ronsard Rocks	Nature Reserve	WA
Rottnest Island	State Reserve	WA
Rottnest Island	State Reserve	WA
Sandland Island	Nature Reserve	WA
Southern Beekeepers	Nature Reserve	WA

Protected Area Name	Reserve Type	State
Unnamed WA11883	5(1)(h) Reserve	WA
Unnamed WA33287	Nature Reserve	WA
Unnamed WA33799	Nature Reserve	WA
Unnamed WA34039	5(1)(h) Reserve	WA
Unnamed WA42030	5(1)(g) Reserve	WA
Unnamed WA44682	5(1)(h) Reserve	WA
Unnamed WA46982	5(1)(h) Reserve	WA
Unnamed WA46983	5(1)(h) Reserve	WA
Unnamed WA46984	5(1)(h) Reserve	WA
Unnamed WA48205	5(1)(h) Reserve	WA
Unnamed WA48717	Conservation Park	WA
Unnamed WA48858	Nature Reserve	WA
Unnamed WA49994	Conservation Park	WA
Utcha Well	Nature Reserve	WA
Wanagarren	Nature Reserve	WA
Wedge Island	Nature Reserve	WA
Yanchep	National Park	WA

EPBC Act Referrals

[Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Alkimos Seawater Desalination	2019/8453		Completed
Carabooda Quarry	2023/09554		Completed
Eradication of the European House Borer, Perth metropolitan area, WA	2009/5027		Completed
Gonneville Nickel-Copper-Platinum Group Element Mine Development Project	2024/09839		Assessment
Jurien Bay Borefield Expansion Bore 29/01	2024/10095		Referral Decision

Title of referral	Reference	Referral Outcome	Assessment Status
Jurien East Road Upgrade, 3 km NNE Jurien Bay, WA	2020/8740		Post-Approval
Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia West	2024/09826		Completed
Midwest Offshore Wind Farm	2022/09264		Assessment
Murchison Hydrogen Renewables Project	2022/09217		Assessment
Samphire Offshore Wind Farm	2022/09306		Assessment
SMAP telecommunications submarine cable installation	2024/09989		Completed
Urban Development of Part Lot 801 Marmion Avenue, Eglinton	2024/09881		Completed
Yanchep Rail Extension, WA	2018/8262		Post-Approval
Yogi Magnetite Project, 225km east, northeast of Geraldton, WA	2017/8124		Post-Approval
Controlled action			
Airborne sonar trials	2001/540	Controlled Action	Completed
Alkimos city centre and central development, WA	2015/7561	Controlled Action	Post-Approval
Alkimos Coastal Node	2020/8861	Controlled Action	Further Information Request
Butler North District Open Space playing fields development, Wanneroo, WA	2017/8053	Controlled Action	Post-Approval
Catalina Residential Development	2010/5785	Controlled Action	Post-Approval
Coburn Mineral Sand Project	2003/1221	Controlled Action	Post-Approval
construction and operation of a unmanned platform at the Cliff Head oil field, a	2003/1300	Controlled Action	Post-Approval
Construction of the Oakajee Port and Rail Project	2011/5797	Controlled Action	Post-Approval
development of land based tourist facilities on Long Island	2006/2792	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Eglinton/South Yanchep Residential Development	2011/6021	Controlled Action	Post-Approval
Eglinton Estates - Clearing of native vegetation from Lot 1007 & part Lot 1008	2010/5777	Controlled Action	Post-Approval
Excavate sand and limestone resources	2010/5621	Controlled Action	Completed
Hematite (iron ore) Mine and Beneficiation Plant	2001/542	Controlled Action	Completed
Jindee Residential Development	2012/6631	Controlled Action	Post-Approval
Karara Magnetite Project	2006/3017	Controlled Action	Post-Approval
Mitchell Freeway Extension and Wanneroo Road Upgrade, WA	2018/8367	Controlled Action	Post-Approval
Mitchell Freeway Extension between Burns Beach Rd and Hester Av, Neerabup, WA	2013/7091	Controlled Action	Post-Approval
Mount Gibson Iron Ore Pellet Project	2000/95	Controlled Action	Completed
Nava-1 Cable System	2001/510	Controlled Action	Completed
Neerabup Industrial Estate, Lot 701 Flynn Drive Neerabup WA	2012/6424	Controlled Action	Post-Approval
Oakajee Rail Development	2010/5500	Controlled Action	Post-Approval
Ocean Reef Marina Development	2009/4937	Controlled Action	Completed
open cut mine & assoc infrastructure	2005/2381	Controlled Action	Post-Approval
Port Enhancement Project	2001/266	Controlled Action	Post-Approval
Proposed Urban Development of Lots 1005 & 1006	2008/4638	Controlled Action	Post-Approval
Residential development,Lot 609, Yanchep Beach Road, Yanchep, WA	2014/7146	Controlled Action	Post-Approval
Residential development Lot 1004 Alkimos WA	2011/5902	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Shark Hazard Mitigation Drum Line Program, WA	2014/7174	Controlled Action	Completed
Shenton Park Subdivision	2004/1479	Controlled Action	Completed
Tourism Facility and Associated Infrastructure	2005/2038	Controlled Action	Post-Approval
Urban and Residential Development at Lot 9 Brighton	2011/6137	Controlled Action	Post-Approval
Urban development in accordance with the Local Structure Plan	2008/4601	Controlled Action	Post-Approval
Urban Residential Development at Lot 9049 Marmoin Avenue	2009/5155	Controlled Action	Post-Approval
Vegetation Clearing, Wannaroo Rd and Nowergup Rd	2011/5955	Controlled Action	Completed
Not controlled action			
Alkimos seawater desalination plant, offshore investigations, WA	2018/8224	Not Controlled Action	Completed
Amberton West urban development - Part lot 9005 Eglington WA	2013/7068	Not Controlled Action	Completed
APX-West Fibre-optic telecommunications cable system, WA to Singapore	2013/7102	Not Controlled Action	Completed
Butler Railway Extension Project - Nowergup Depot Eastern Alignment	2011/5989	Not Controlled Action	Completed
Cliff Head 6 appraisal well	2004/1702	Not Controlled Action	Completed
Cliff Head Appraisal Wells	2003/938	Not Controlled Action	Completed
Construction of several passing lanes between Lancelin and Jurien Bay, WA	2015/7509	Not Controlled Action	Completed
Container Deposit Scheme Project	2019/8517	Not Controlled Action	Completed
Development of new Alkimos Wastwater Treatment Plant	2007/3259	Not Controlled Action	Completed
Drilling between Kalbarri and Cliff Head	2005/2185	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Establishment of a 12.7 ha Gypsum Mine	2007/3398	Not Controlled Action	Completed
Exploration drilling program located in exploration permits WA-286-P and TP/15	2002/676	Not Controlled Action	Completed
Extension of 7.5km of the Joondalup Line electrified passenger railway from Cla	2010/5632	Not Controlled Action	Completed
Geo-science Investigations	2005/2069	Not Controlled Action	Completed
Glenfield Beach Project	2012/6359	Not Controlled Action	Completed
Hadda 1,Flying Foam 1,Magnat 1 exploration drill	2004/1697	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
Indian Ocean Drive Passing Lane and Widening 52-258 SLK	2017/7884	Not Controlled Action	Completed
Indian Ocean Drive Widening, Gingin Shire, WA	2018/8346	Not Controlled Action	Completed
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
INDIGO West Submarine Telecommunications Cable, WA	2017/8126	Not Controlled Action	Completed
Lancelin Caravan Park Project, Hopkins Dve & Casserley Way, Lancelin	2015/7546	Not Controlled Action	Completed
Maintenance Dredging in the Geraldton Port Outer Channel	2010/5488	Not Controlled Action	Completed
Nowergup Strawberry Farm McLennan Drive, Nowergup, WA	2017/8042	Not Controlled Action	Completed
Ocean Reef Marina Development, City of Joondalup, WA	2014/7237	Not Controlled Action	Completed
Oman Australia Cable Installation, WA	2021/8922	Not Controlled Action	Completed
Oman Australia Cable - Marine Route Survey	2020/8731	Not Controlled Action	Completed
Quinns Main sewer extension, Clarkson - Neerabup, WA	2018/8215	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Residential development, Lots 9010 and 9031, Yanchep Beach Rd, Yanchep	2016/7642	Not Controlled Action	Completed
Residential Development Eglinton West, Lot 5000 & part Lot 5001, Pipidinny Road, Eglinton	2014/7137	Not Controlled Action	Completed
residential subdivision	2005/1965	Not Controlled Action	Completed
Rottnest Lodge Redevelopment	2019/8565	Not Controlled Action	Completed
Scientific Sonar Trial	2002/680	Not Controlled Action	Completed
Seismic Survey, Bremer Basin, Mentelle Basin and Zeewyck Sub-basin	2004/1700	Not Controlled Action	Completed
WA-286-P Exploration Drilling Programme	2007/3863	Not Controlled Action	Completed
Yellowfin Tuna Aquaculture Trial	2003/1115	Not Controlled Action	Completed
Yngling-1 exploration well for WA-368-P	2007/3523	Not Controlled Action	Completed
Not controlled action (particular manner)			
2D Marine Seismic Survey in Permit Area WA-337-P	2003/1158	Not Controlled Action (Particular Manner)	Post-Approval
2D seismic survey	2008/4493	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey	2007/3800	Not Controlled Action (Particular Manner)	Post-Approval
Acheron Non-Exclusive 2D Seismic Survey	2009/4968	Not Controlled Action (Particular Manner)	Post-Approval
Acheron Non-Exclusive 2D Seismic Survey	2008/4565	Not Controlled Action (Particular Manner)	Post-Approval
Australian Square Kilometre Array Pathfinder telescope &	2009/4891	Not Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
infrastructure		(Particular Manner)	
Australia to Singapore Fibre Optic Submarine Cable System	2011/6127	Not Controlled Action (Particular Manner)	Post-Approval
develop and operate a new deepwater port	2010/5760	Not Controlled Action (Particular Manner)	Post-Approval
Grand Southern Margin 2D Marine Seismic Survey	2008/4599	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
Laying a submarine optical fibre telecommunications cable, Perth to Singapore and Jakarta	2014/7332	Not Controlled Action (Particular Manner)	Post-Approval
Marine Environmental Survey	2012/6275	Not Controlled Action (Particular Manner)	Post-Approval
Marine reconnaissance survey	2008/4466	Not Controlled Action (Particular Manner)	Post-Approval
Marine Seismic Survey for oil and gas in Commonwealth waters off the WA coast.	2004/1802	Not Controlled Action (Particular Manner)	Post-Approval
Marine Seismic Survey in Permit WA-481P	2012/6626	Not Controlled Action (Particular Manner)	Post-Approval
Nexus Energy Seismic survey WA	2006/2569	Not Controlled Action (Particular Manner)	Post-Approval
North Perth Marine Survey	2011/6067	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Quiberon 2D Seismic Survey, permit area WA-385P, offshore of Carnarvon	2009/5077	Not Controlled Action (Particular Manner)	Post-Approval
search for HMAS Sydney	2006/3071	Not Controlled Action (Particular Manner)	Post-Approval
Study of behavioural responses of Austn Humpback Whales to seismic surveys, offshore Dongara, WA	2013/6927	Not Controlled Action (Particular Manner)	Post-Approval
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
3D Marine Seismic survey	2007/3729	Referral Decision	Completed
3D Seismic Survey	2012/6245	Referral Decision	Completed
Exploration Drilling 2014/2015 WA-481-P	2013/7043	Referral Decision	Completed
Grand Southern Margin 2D Marine Seismic Survey	2008/4573	Referral Decision	Completed
Proposed exploration drilling activities, Abrolhos Commonwealth Marine Reserve	2013/6949	Referral Decision	Completed
Residential Subdivision of 60ha, Swan Location 2424	2004/1928	Referral Decision	Completed
Sonar Trials and Acoustic Trials	2001/538	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
Ancient coastline at 90-120m depth	South-west
Commonwealth marine environment surrounding the Houtman Abrolhos Islands	South-west
Commonwealth marine environment within and adjacent to the west coast inshore lagoons	South-west

Name	Region
Naturaliste Plateau	South-west
Perth Canyon and adjacent shelf break, and other west coast canyons	South-west
Wallaby Saddle	North-west
Western demersal slope and associated fish communities	South-west
Western rock lobster	South-west

Biologically Important Areas		[Resource Information]
Scientific Name	Behaviour	Presence
Seabirds		
Anous stolidus Common Noddy [825]	Foraging	Likely to occur
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Foraging	Known to occur
Ardenna carneipes Flesh-footed Shearwater [82404]	Foraging	Known to occur
Ardenna pacifica Wedge-tailed Shearwater [84292]	Foraging	Known to occur
Ardenna pacifica Wedge-tailed Shearwater [84292]	Reproduction	Known to occur
Eudyptula minor Little Penguin [1085]	Foraging	Likely to occur
Hydroprogne caspia Caspian Tern [808]	Foraging	Known to occur
Larus pacificus Pacific Gull [811]	Foraging	Known to occur
Onychoprion anaethetus Bridled Tern [82845]	Foraging	Likely to occur
Onychoprion fuscatus Sooty Tern [90682]	Foraging	Known to occur
Pelagodroma marina White-faced Storm-petrel [1016]	Foraging	Known to occur

Scientific Name	Behaviour	Presence
Pterodroma mollis Soft-plumaged Petrel [1036]	Foraging	Known to occur
Puffinus assimilis Little Shearwater [59363]	Foraging	Likely to occur
Sterna dougallii Roseate Tern [817]	Foraging	Known to occur
Sternula nereis Fairy Tern [82949]	Foraging	Known to occur
Seals		
Neophoca cinerea Australian Sea Lion [22]	Foraging	Likely to occur
Sharks		
Carcharodon carcharias White Shark [64470]	Foraging	Known to occur
Whales		
Balaenoptera musculus Blue and Pygmy Blue Whale [36]	Foraging	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging	Likely to be present
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Migration	Known to occur
Eubalaena australis Southern Right Whale [40]	Migration	
Megaptera novaeangliae Humpback Whale [38]	Migration	Known to occur
Physeter macrocephalus Sperm Whale [59]	Foraging	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 is 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 on the contents of this report.

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 point locations and environmental data layers.

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 when time permits.

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 breeding sites; and
- 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: 25-Jun-2026

[Summary](#)
[Details](#)
- [Matters of NES](#)
- [Other Matters Protected by the EPBC Act](#)
- [Extra Information](#)

[Caveat](#)
[Acknowledgements](#)

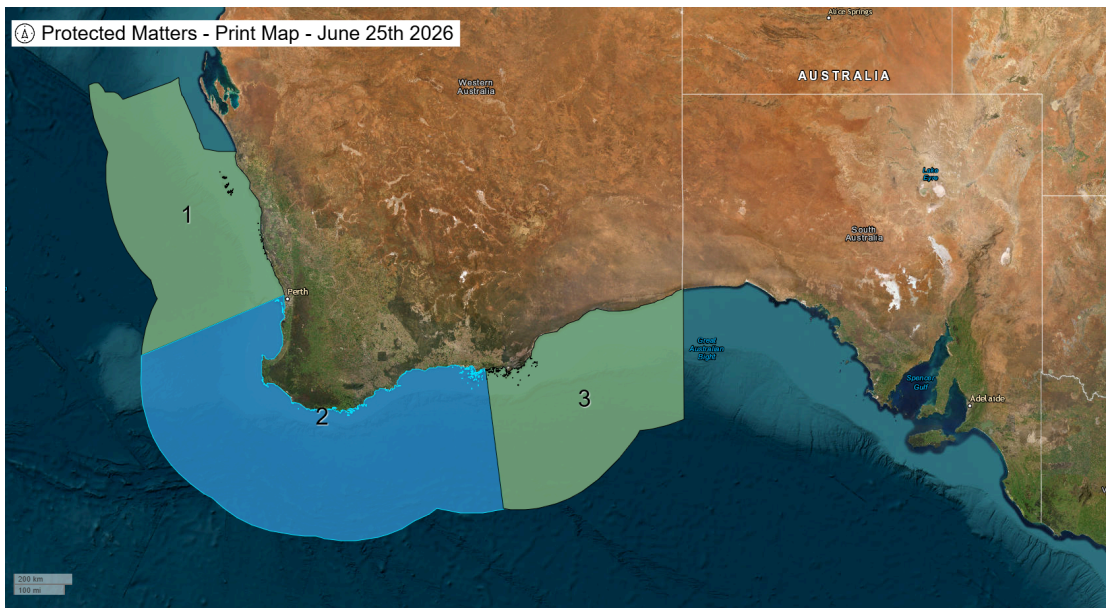


Figure 1: South West Marine Region - Central (Part 2)

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.

World Heritage Properties:	1
National Heritage Places:	3
Wetlands of International Importance (Ramsar	6
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	3
Listed Threatened Ecological Communities:	14
Listed Threatened Species:	176
Listed Migratory Species:	86

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	66
Commonwealth Heritage Places:	5
Listed Marine Species:	124
Whales and Other Cetaceans:	39
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	29
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	158
Regional Forest Agreements:	1
Nationally Important Wetlands:	None
EPBC Act Referrals:	303
Key Ecological Features (Marine):	11
Biologically Important Areas:	27
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

World Heritage Properties [Resource Information]

Name	State	Legal Status
Australian Convict Sites (Fremantle Prison)	WA	Declared property

National Heritage Places [Resource Information]

Name	State	Legal Status
Historic		
Fremantle Prison (former)	WA	Listed place
Indigenous		
Cheetup Rock Shelter	WA	Listed place
Natural		
Fitzgerald River National Park	WA	Listed place

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity
Becher point wetlands	Within Ramsar site
Forrestdale and thomsons lakes	Within Ramsar site
Lake gore	Within Ramsar site
Lake warden system	Within Ramsar site
Peel-yalgorup system	Within Ramsar site
Vasse-wonnerup system	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
Aquatic Root Mat Community 1 in Caves of the Leeuwin Naturaliste Ridge	Endangered	Community known to occur within area
Aquatic Root Mat Community 3 in Caves of the Leeuwin Naturaliste Ridge	Endangered	Community known to occur within area
Aquatic Root Mat Community 4 in Caves of the Leeuwin Naturaliste Ridge	Endangered	Community known to occur within area
Banksia Woodlands of the Swan Coastal Plain ecological community	Endangered	Community likely to occur within area
Clay Pans of the Swan Coastal Plain	Critically Endangered	Community likely to occur within area
Empodisma peatlands of southwestern Australia	Endangered	Community likely to occur within area
Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion	Critically Endangered	Community likely to occur within area
Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia	Endangered	Community likely to occur within area
Scott River Ironstone Association	Endangered	Community likely to occur within area
Sedgelands in Holocene dune swales of the southern Swan Coastal Plain	Endangered	Community known to occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area
Thrombolite (microbial) community of coastal freshwater lakes of the Swan Coastal Plain (Lake Richmond)	Endangered	Community known to occur within area
Thrombolite (microbialite) Community of a Coastal Brackish Lake (Lake Clifton)	Critically Endangered	Community known to occur within area
Tuart (Eucalyptus gomphocephala) Woodlands and Forests of the Swan Coastal Plain ecological community	Critically Endangered	Community likely to occur within area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat may occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting likely to occur within area
Atrichornis clamosus Noisy Scrub-bird, Tjimiluk [654]	Endangered	Species or species habitat likely to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting likely to occur within area
Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Cereopsis novaehollandiae grisea Cape Barren Goose (south-western), Recherche Cape Barren Goose [25978]	Vulnerable	Breeding likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting likely to occur within area
Dasyornis longirostris Western Bristlebird [515]	Endangered	Species or species habitat likely to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Endangered	Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely 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), Indian Ocean Red-tailed Tropicbird [91824]	Endangered	Species or species habitat likely to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting likely to occur within area
Psophodes nigrogularis nigrogularis Western Heath Whipbird [64449]	Endangered	Species or species habitat likely to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Species or species habitat may occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Breeding likely 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

Scientific Name	Threatened Category	Presence Text
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 likely to occur within area
Xenus cinereus		
Terek Sandpiper [59300]	Vulnerable	Roosting likely to occur within area
Zanda baudinii listed as Calyptorhynchus baudinii		
Baudin's Cockatoo, Baudin's Black-Cockatoo, Long-billed Black-cockatoo [87736]	Endangered	Breeding likely to occur within area
Zanda latirostris listed as Calyptorhynchus latirostris		
Carnaby's Black Cockatoo, Short-billed Black-cockatoo [87737]	Endangered	Breeding likely to occur within area
CRUSTACEAN		
Cherax tenuimanus		
Hairy Marron, Margaret River Hairy Marron, Margaret River Marron [78931]	Critically Endangered	Species or species habitat may occur within area
Engaewa pseudoreducta		
Margaret River Burrowing Crayfish [82674]	Critically Endangered	Species or species habitat may occur within area
Engaewa reducta		
Dunsborough Burrowing Crayfish [82675]	Critically Endangered	Species or species habitat likely to occur within area
Engaewa walpolea		
Walpole Burrowing Crayfish [82676]	Endangered	Species or species habitat likely to occur within area
FISH		
Galaxias truttaceus (Western Australian population)		
Western Trout Minnow [89857]	Endangered	Species or species habitat likely to occur within area
Galaxiella munda		
Western Dwarf Galaxias, Western Mud Minnow [79240]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Galaxiella nigrostriata		
Blackstriped Dwarf Galaxias, Black-stripe Minnow [88677]	Endangered	Species or species habitat likely to occur within area
Hoplostethus atlanticus		
Orange Roughy, Deep-sea Perch, Red Roughy [68455]	Conservation Dependent	Species or species habitat likely to occur within area
Nannatherina balstoni		
Balston's Pygmy Perch [66698]	Vulnerable	Species or species habitat likely to occur within area
Nannoperca pygmaea		
Little Pygmy Perch [88315]	Endangered	Species or species habitat likely to occur within area
FROG		
Spicospina flammocaerulea		
Sunset Frog [64782]	Vulnerable	Species or species habitat likely to occur within area
INSECT		
Hesperocolletes douglasi		
Douglas' Broad-headed Bee, Rottnest Bee [66734]	Critically Endangered	Species or species habitat may occur within area
Trioza barrettae		
Banksia brownii plant louse [87805]	Endangered	Species or species habitat likely to occur within area
MAMMAL		
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Bettongia penicillata ogilbyi Woylie [66844]	Endangered	Species or species habitat likely to occur within area
Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat likely to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding likely to occur within area
Myrmecobius fasciatus Numbat [294]	Endangered	Species or species habitat may occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Breeding known to occur within area
Parantechinus apicalis Dibbler [313]	Endangered	Translocated population known to occur within area
Petrogale lateralis hacketti Recherche Rock-wallaby [66849]	Vulnerable	Species or species habitat likely to occur within area
Petrogale lateralis lateralis Black-flanked Rock-wallaby, Mooroorong, Black-footed Rock Wallaby [66647]	Endangered	Translocated population known to occur within area
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	Translocated population known to occur within area
Pseudocheirus occidentalis Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911]	Critically Endangered	Breeding likely to occur within area
Pseudomys shortridgei Heath Mouse, Dayang, Heath Rat [77]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Setonix brachyurus Quokka [229]	Vulnerable	Species or species habitat likely to occur within area
OTHER		
Westralunio carteri Carter's Freshwater Mussel, Ambiguus Mussel [86266]	Vulnerable	Species or species habitat likely 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 likely to occur within area
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
Austrostipa bronweniae listed as Austrostipa bronwenae [92773]	Endangered	Species or species habitat likely to occur within area
Austrostipa jacobsiana [87809]	Critically Endangered	Species or species habitat likely to occur within area
Banksia anatona Cactus Dryandra [82758]	Critically Endangered	Species or species habitat may occur within area
Banksia brownii Brown's Banksia, Feather-leaved Banksia [8277]	Critically Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Banksia goodii Good's Banksia [16727]	Vulnerable	Species or species habitat likely to occur within area
Banksia mimica Summer Honeypot [82765]	Endangered	Species or species habitat may occur within area
Banksia nivea subsp. uliginosa Swamp Honeypot [82766]	Endangered	Species or species habitat likely to occur within area
Banksia pseudoplumosa False Plumed-Banksia [82760]	Endangered	Species or species habitat likely to 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 likely to occur within area
Boronia clavata Bremer Boronia [5538]	Endangered	Species or species habitat likely to occur within area
Boronia exilis Scott River Boronia [64844]	Endangered	Species or species habitat likely to 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 likely to occur within area

Scientific Name	Threatened Category	Presence Text
Caladenia excelsa		
Giant Spider-orchid [56717]	Endangered	Species or species habitat likely to occur within area
Caladenia granitora		
[65292]	Endangered	Species or species habitat likely to occur within area
Caladenia harringtoniae		
Harrington's Spider-orchid, Pink Spider-orchid [56786]	Vulnerable	Species or species habitat likely to occur within area
Caladenia hoffmanii		
Hoffman's Spider-orchid [56719]	Endangered	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 likely 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 likely to occur within area
Caladenia viridescens		
Dunsborough Spider-orchid [56776]	Endangered	Species or species habitat likely 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]	Endangered (listed as Chamelaucium sp. Gingin	Species or species habitat likely to occur within area
Chamelaucium roycei listed as Chamelaucium sp. S coastal plain (R.D.Royce 4872)		
Royce's Waxflower [56751]	Vulnerable (listed as Chamelaucium sp. S coastal plain	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
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 likely to occur within area
Conospermum quadripetalum [65312]	Critically Endangered	Species or species habitat likely to occur within area
Conostylis misera Grass Conostylis [21320]	Endangered	Species or species habitat likely to occur within area
Coopernookia georgei Mauve Coopernookia [21218]	Endangered	Species or species habitat likely to occur within area
Darwinia ferricola Scott River Darwinia [56706]	Endangered	Species or species habitat likely to occur within area
Daviesia obovata Paddle-leaf Daviesia [17311]	Endangered	Species or species habitat likely to occur within area
Daviesia ovata Broad-leaf Daviesia [21193]	Critically Endangered	Species or species habitat likely to occur within area
Diuris drummondii Tall Donkey Orchid [4365]	Vulnerable	Species or species habitat likely to occur within area
Diuris micrantha Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat likely to occur within area
Diuris purdiei Purdie's Donkey-orchid [12950]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Drakaea elastica Glossy-leafed Hammer Orchid, Glossy-leaved Hammer Orchid, Warty Hammer Orchid [16753]	Endangered	Species or species habitat likely to occur within area
Drakaea micrantha Dwarf Hammer-orchid [56755]	Vulnerable	Species or species habitat likely to occur within area
Eleocharis keigheryi Keighery's Eleocharis [64893]	Vulnerable	Species or species habitat likely to occur within area
Eucalyptus argutifolia Yanchep Mallee, Wabling Hill Mallee [24263]	Vulnerable	Species or species habitat may occur within area
Eucalyptus burdettiana Burdett Gum [13505]	Endangered	Species or species habitat likely to occur within area
Eucalyptus coronata Crowned Mallee [2308]	Vulnerable	Species or species habitat likely to occur within area
Eucalyptus insularis Twin Peak Island Mallee [3057]	Endangered	Species or species habitat likely to occur within area
Eucalyptus x phylacis Meelup Mallee [87817]	Endangered	Species or species habitat likely to occur within area
Gastrolobium argyrotrichum Metricup Pea [89145]	Critically Endangered	Species or species habitat likely to occur within area
Gastrolobium papilio Butterfly-leaved Gastrolobium [78415]	Endangered	Species or species habitat may occur within area
Grevillea brachystylis subsp. australis [55525]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Grevillea elongata Ironstone Grevillea [64578]	Vulnerable	Species or species habitat may occur within area
Grevillea infundibularis Fan-leaf Grevillea [5772]	Endangered	Species or species habitat likely to occur within area
Isopogon uncinatus Albany Cone Bush, Hook-leaf Isopogon [20871]	Endangered	Species or species habitat likely to occur within area
Kennedia glabrata Northcliffe Kennedia [16452]	Vulnerable	Species or species habitat likely to occur within area
Kennedia lateritia Augusta Kennedia [45985]	Endangered	Species or species habitat likely to occur within area
Kunzea similis subsp. similis [84068]	Critically Endangered	Species or species habitat likely to occur within area
Lambertia echinata subsp. echinata Prickly Honeysuckle [56729]	Endangered	Species or species habitat likely to occur within area
Lambertia echinata subsp. occidentalis Western Prickly Honeysuckle [64528]	Endangered	Species or species habitat may occur within area
Lambertia orbifolia Roundleaf Honeysuckle [15725]	Endangered	Species or species habitat likely to occur within area
Leptomeria dielsiana Diels' Currant Bush [5146]	Vulnerable	Species or species habitat likely to occur within area
Microtis globula South-Coast Mignonette Orchid [6780]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Morelotia australiensis listed as Tetraria australiensis		
Southern Tetraria [92784]	Vulnerable	Species or species habitat likely to occur within area
Myoporum cordifolium		
Jerramungup Myoporum [24223]	Vulnerable	Species or species habitat likely to occur within area
Petrophile latericola		
Laterite Petrophile [64532]	Endangered	Species or species habitat likely to occur within area
Reedia spathacea		
Reedia [2995]	Critically Endangered	Species or species habitat likely to occur within area
Ricinocarpos trichophorus		
Barrens Wedding Bush [19931]	Endangered	Species or species habitat may occur within area
Scaevola macrophylla		
Large-flowered Scaevola [11806]	Critically Endangered	Species or species habitat may occur within area
Sphenotoma drummondii		
Mountain Paper-heath [21160]	Endangered	Species or species habitat likely to occur within area
Stylidium galioides		
Yellow Mountain Triggerplant [4666]	Vulnerable	Species or species habitat likely to occur within area
Synaphea sp. Fairbridge Farm (D.Papenfus 696)		
Selena's Synaphea [82881]	Critically Endangered	Species or species habitat likely to occur within area
Synaphea sp. Serpentine (G.R.Brand 103)		
[86879]	Critically Endangered	Species or species habitat may occur within area
Synaphea stenoloba		
Dwellingup Synaphea [66311]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Thelymitra variegata Queen of Sheba [12582]	Critically Endangered	Species or species habitat likely to occur within area
Verticordia apecta Hay River Featherflower, Scruffy Verticordia [65545]	Critically Endangered	Species or species habitat may occur within area
Verticordia crebra [55678]	Vulnerable	Species or species habitat likely to occur within area
Verticordia densiflora var. pedunculata Long-stalked Featherflower [55689]	Endangered	Species or species habitat may occur within area
Verticordia fimbrilepis subsp. australis Southern Shy Featherflower [24630]	Vulnerable	Species or species habitat likely to occur within area
Verticordia helichrysantha Coast Featherflower [8204]	Vulnerable	Species or species habitat likely to occur within area
Verticordia pityrhops Little Pine Verticordia, Pine-like Featherflower [55798]	Endangered	Species or species habitat likely to occur within area
Verticordia plumosa var. ananeotes Tufted Plumed Featherflower [23871]	Endangered	Species or species habitat may occur within area
Verticordia plumosa var. vassensis Vasse Featherflower [55804]	Endangered	Species or species habitat likely to occur within area
Wurmbea calcicola Naturaliste Nancy [64691]	Endangered	Species or species habitat likely to occur within area
REPTILE		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding likely to occur within area
SHARK		
Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752]	Vulnerable	Congregation or aggregation likely to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Centrophorus uyato Little Gulper Shark [68446]	Conservation Dependent	Species or species habitat likely to occur within area
Galeorhinus galeus Tope, Flake, Oil Shark, School Shark [68453]	Conservation Dependent	Species or species habitat may occur within area
Pristis pristis Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area
SPIDER		
Bertmainius tingle Tingle Pygmy Trapdoor Spider [89126]	Endangered	Species or species habitat likely to occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text

Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
[Anous stolidus](#) Common Noddy [825]		Species or species habitat likely to occur within area
[Apus pacificus](#) Fork-tailed Swift [678]		Species or species habitat likely to occur within area
[Ardenna carneipes](#) Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
[Ardenna grisea](#) Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
[Ardenna pacifica](#) Wedge-tailed Shearwater [84292]		Breeding likely to occur within area
[Ardenna tenuirostris](#) Short-tailed Shearwater [82652]		Breeding likely to occur within area
[Diomedea amsterdamensis](#) Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
[Diomedea antipodensis](#) Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[Diomedea dabbenena](#) Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area
[Diomedea epomophora](#) Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
[Diomedea exulans](#) Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Hydroprogne caspia Caspian Tern [808]		Breeding likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Onychoprion anaethetus Bridled Tern [82845]		Breeding likely to occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat may occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Sterna dougallii Roseate Tern [817]		Breeding likely to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Species or species habitat may occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
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
Migratory Marine Species		
Balaenoptera bonaerensis		
Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni		
Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Caperea marginata		
Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat likely to occur within area
Carcharias taurus Grey Nurse Shark [64469]		Congregation or aggregation likely to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Breeding likely to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat likely to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]		Foraging, feeding or related behaviour known to occur within area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
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 likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Foraging, feeding or related behaviour known to occur within area
Pristis pristis Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
Motacilla cinerea Grey Wagtail [642]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting likely to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
Calidris alba Sanderling [875]		Roosting likely to occur within area

Scientific Name	Threatened Category	Presence Text
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area
Calidris falcinellus as Limicola falcinellus Broad-billed Sandpiper [91731]		Roosting likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area
Calidris pugnax as Philomachus pugnax Ruff [91256]		Roosting likely to occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting likely to occur within area
Calidris subminuta Long-toed Stint [861]		Roosting likely to occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting likely to occur within area
Charadrius bicinctus Double-banded Plover [895]		Roosting likely to occur within area
Charadrius dubius Little Ringed Plover [896]		Species or species habitat likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting likely to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area

Scientific Name	Threatened Category	Presence Text
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Glareola maldivarum Oriental Pratincole [840]		Roosting likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Numenius phaeopus Whimbrel [849]		Roosting likely to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Phalaropus lobatus Red-necked Phalarope [838]		Roosting likely to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting likely to occur within area
Thalasseus bergii Greater Crested Tern [83000]		Breeding likely to occur within area
Tringa brevipes Grey-tailed Tattler [851]		Roosting likely to occur within area

Scientific Name	Threatened Category	Presence Text
Tringa glareola Wood Sandpiper [829]		Roosting likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting likely to occur within area
Tringa totanus Common Redshank, Redshank [835]		Roosting likely to occur within area
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Roosting 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
Australian Broadcasting Corporation	
BUNBUT 00320 [AGPR210]	WA
Lot 31 P027286 [AGPR208]	WA
Australian Postal Corporation	
Lot 0 S020494 [AGPR7372]	WA
Lot 10 D017395 [AGPR7218]	WA
Lot 17 D070540 [AGPR7188]	WA
Lot 1 D084946 [AGPR7186]	WA
Lot 2 D091270 [AGPR6994]	WA
Lot 30 D067227 [AGPR7256]	WA
Lot 4 D072395 [AGPR7388]	WA
Lot 51 D092398 [AGPR7204]	WA
Bureau of Meteorology	

Commonwealth Land Name	State
Lot 50 D034438 [AGPR322]	WA
Commonwealth of Australia	
Lot B 42 P144904 [AGPR6654]	WA
Lot B 44 P144904 [AGPR6655]	WA
Department of Climate Change, Energy, the Environment and Water	
Artillery Barracks [CHL_105332]	WA
Cape Leeuwin Lighthouse [CHL_105416]	WA
Cliff Point Historic Site [CHL_105273]	WA
Garden Island [CHL_105274]	WA
J Gun Battery [CHL_105272]	WA
Department of Defence	
AAC 511 Army Cadet Unit - Busselton [DD_3353]	WA
AAFC 705 Squadron - Albany [DD_0950]	WA
AAFC 707 Squadron - Mandurah [DD_3378]	WA
Albany AIRTC Depot [AGPR4282]	WA
Albany AIRTC Depot [AGPR4283]	WA
Albany Training Depot [DD_0670]	WA
AMC Henderson Common User Facility [DD_3219]	WA
ANC TS KYBRA - Esperance [DD_3221]	WA
ANC TS VANCOUVER - Albany [DD_0078]	WA
ANZAC SPO - 85 Chalgrove Ave Rockingham [DD_3166]	WA
Artillery Barracks - Fremantle [DD_0704]	WA
Bunbury Training Depot [DD_0681]	WA
Campbell Barracks [AGPR4473]	WA
Campbell Barracks [AGPR4478]	WA
Campbell Barracks [AGPR4477]	WA
Campbell Barracks [AGPR4481]	WA
Campbell Barracks [AGPR4480]	WA

Commonwealth Land Name	State
Campbell Barracks [AGPR4479]	WA
Campbell Barracks [AGPR4384]	WA
Campbell Barracks - Swanbourne [DD_0767]	WA
COCKBL 00696 [AGPR4395]	WA
Coolilup Rifle Range [DD_0689]	WA
DMFS - 23 Chalgrove Ave - Rockingham [DD_0090]	WA
Fremantle Harbour Dockyard [DD_0175]	WA
HMAS Stirling [AGPR4442]	WA
HMAS Stirling [DD_0089]	WA
HMAS Stirling [AGPR4443]	WA
HMAS Stirling [AGPR4440]	WA
HMAS Stirling [AGPR4441]	WA
Lot 1 Plan D065920 [AGPR4438]	WA
Lot 2196 P176417 [AGPR4469]	WA
Lot 3055 Plan P189811 [AGPR4468]	WA
Lot 50 D095534 [AGPR4470]	WA
Lot 601 P065368 [AGPR4439]	WA
Lot 70 D079287 [AGPR4396]	WA
Navy Capability Centre - Henderson [DD_1030]	WA
Submarine Escape and Rescue Sys Facility [DD_1237]	WA
Swanbourne Rifle Range [AGPR4476]	WA
Swanbourne Rifle Range [AGPR4483]	WA
Swanbourne Rifle Range [AGPR4482]	WA
Swanbourne Rifle Ranges [DD_0768]	WA
WA Offshore Training Area [DD_3034]	WA
Department of Home Affairs	
Lot 167 P050251 [AGPR6101]	WA

Commonwealth Land Name	State
Lot 324 P013885 [AGPR6134]	WA
Lot 359 P019014 [AGPR6135]	WA
Lot 62 D056867 [AGPR6132]	WA
Lot 669 P055175 [AGPR4737]	WA
Royal Australian Navy Central Canteens Board (Royal Australian Navy Central Canteens Fund)	
Lot 5 D019592 [AGPR5813]	WA

Commonwealth Heritage Places [Resource Information]

Name	State	Status
Historic		
Artillery Barracks	WA	Listed place
Cape Leeuwin Lighthouse	WA	Listed place
Cliff Point Historic Site	WA	Listed place
J Gun Battery	WA	Listed place
Natural		
Garden Island	WA	Listed place

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely 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	Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely 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 likely to occur within area
Ardenna tenuirostris as Puffinus tenuirostris Short-tailed Shearwater [82652]		Breeding likely to occur within area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting likely 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	Species or species habitat likely to occur within area
Calidris alba Sanderling [875]		Roosting likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Calidris falcinellus as Limicola falcinellus Broad-billed Sandpiper [91731]		Roosting likely to occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area overfly marine area
Calidris pugnax as Philomachus pugnax Ruff [91256]		Roosting likely to occur within area overfly marine area
Calidris ruficollis Red-necked Stint [860]		Roosting likely to occur within area overfly marine area
Calidris subminuta Long-toed Stint [861]		Roosting likely to occur within area overfly marine area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting likely to occur within area overfly marine area
Cereopsis novaehollandiae grisea Cape Barren Goose (south-western), Recherche Cape Barren Goose [25978]	Vulnerable	Breeding likely to occur within area overfly marine area
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 likely to occur within area overfly marine area
Charadrius dubius Little Ringed Plover [896]		Species or species habitat likely to occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting likely to occur within area

Scientific Name	Threatened Category	Presence Text
Charadrius ruficapillus Red-capped Plover [881]		Roosting likely to occur within area overfly marine area
Chroicocephalus novaehollandiae as Larus novaehollandiae Silver Gull [82326]		Breeding likely to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Eudyptula minor Little Penguin [1085]		Breeding likely to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Glareola maldivarum Oriental Pratincole [840]		Roosting likely to occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Roosting likely to occur within area overfly marine area
Hydroprogne caspia as Sterna caspia Caspian Tern [808]		Breeding likely to occur within area
Larus dominicanus Kelp Gull [809]		Breeding likely to occur within area
Larus pacificus Pacific Gull [811]		Breeding likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting likely to occur within area overfly marine area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat likely to occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely 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 likely to occur within area
Onychoprion anaethetus as Sterna anaethetus Bridled Tern [82845]		Breeding likely to occur within area
Onychoprion fuscatus as Sterna fuscata Sooty Tern [90682]		Breeding likely to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Pelagodroma marina White-faced Storm-Petrel [1016]		Breeding likely to occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat may occur within area
Phalacrocorax fuscescens Black-faced Cormorant [59660]		Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
Phalaropus lobatus Red-necked Phalarope [838]		Roosting likely to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting likely to occur within area overfly marine area
Pterodroma macroptera Great-winged Petrel [1035]		Foraging, feeding or related behaviour known to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Puffinus assimilis Little Shearwater [59363]		Foraging, feeding or related behaviour known to occur within area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Roosting likely 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 likely to occur within area

Scientific Name	Threatened Category	Presence Text
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Species or species habitat may occur within area
Sternula nereis as Sterna nereis Fairy Tern [82949]		Breeding likely 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
Thalasseus bergii as Sterna bergii Greater Crested Tern [83000]		Breeding likely to occur within area
Thinornis cucullatus as Thinornis rubricollis Hooded Plover, Hooded Dotterel [87735]		Species or species habitat likely to occur within area overfly marine area
Tringa brevipes as Heteroscelus brevipes Grey-tailed Tattler [851]		Roosting likely to occur within area

Scientific Name	Threatened Category	Presence Text
Tringa glareola Wood Sandpiper [829]		Roosting likely to occur within area overfly marine area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting likely to occur within area overfly marine area
Tringa totanus Common Redshank, Redshank [835]		Roosting likely to occur within area overfly marine area
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Roosting likely to occur within area overfly marine area
Fish		
Campichthys galei Gale's Pipefish [66191]		Species or species habitat may occur within area
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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
Idiotropiscis australe as Acentronura australe Southern Pygmy Pipehorse [74958]		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

Scientific Name	Threatened Category	Presence Text
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 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		

Scientific Name	Threatened Category	Presence Text
[Arctocephalus forsteri](#)		
Long-nosed Fur-seal, New Zealand Fur-seal [20]		Breeding likely to occur within area
[Neophoca cinerea](#)		
Australian Sea-lion, Australian Sea Lion [22]	Endangered	Breeding known to occur within area
Reptile		
[Aipysurus pooleorum](#)		
Shark Bay Sea Snake [66061]		Species or species habitat may occur within area
[Caretta caretta](#)		
Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
[Chelonia mydas](#)		
Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
[Dermochelys coriacea](#)		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur 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	Breeding likely 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 Minke Whale [67812]		Species or species habitat likely to occur within area

Current Scientific Name	Status	Type of Presence
[Balaenoptera borealis](#) Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[Balaenoptera edeni](#) Bryde's Whale [35]		Species or species habitat likely to occur within area
[Balaenoptera musculus](#) Blue Whale [36]	Endangered	Migration route known to occur within area
[Balaenoptera physalus](#) Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[Berardius arnuxii](#) Arnoux's Beaked Whale [70]		Species or species habitat may occur within area
[Caperea marginata](#) Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area
[Delphinus delphis](#) Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
[Eubalaena australis](#) Southern Right Whale [40]	Endangered	Breeding likely to occur within area
[Feresa attenuata](#) Pygmy Killer Whale [61]		Species or species habitat may occur within area
[Globicephala macrorhynchus](#) Short-finned Pilot Whale [62]		Species or species habitat may occur within area
[Globicephala melas](#) Long-finned Pilot Whale [59282]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Hyperoodon planifrons Southern Bottlenose Whale [71]		Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat likely to occur within area
Lissodelphis peronii Southern Right Whale Dolphin [44]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Foraging, feeding or related behaviour known to occur within area
Mesoplodon bowdoini Andrew's Beaked Whale [73]		Species or species habitat may occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Mesoplodon ginkgodens Gingko-toothed Beaked Whale, Gingko-toothed Whale, Gingko Beaked Whale [59564]		Species or species habitat may occur within area
Mesoplodon grayi Gray's Beaked Whale, Scamperdown Whale [75]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Mesoplodon hectori Hector's Beaked Whale [76]		Species or species habitat may occur within area
Mesoplodon layardii Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale [25556]		Species or species habitat may occur within area
Mesoplodon mirus True's Beaked Whale [54]		Species or species habitat may occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Foraging, feeding or related behaviour known to occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Tasmacetus shepherdi Shepherd's Beaked Whale, Tasman Beaked Whale [55]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks	[Resource Information]
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)
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	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
Basil Road	Nature Reserve	WA
Bold Park	Botanic Gardens	WA
Boorara-Gardner	National Park	WA

Protected Area Name	Reserve Type	State
Breaksea Island	Nature Reserve	WA
Broadwater	Nature Reserve	WA
Cape Le Grand	National Park	WA
Carnac Island	Nature Reserve	WA
Chatham Island	Nature Reserve	WA
Cheyne Island	Nature Reserve	WA
Creery Island	Nature Reserve	WA
D'Entrecasteaux	National Park	WA
Doubtful Islands	Nature Reserve	WA
Eclipse Island	Nature Reserve	WA
Esperance 827 and Part 373 & 826	NRS Addition - Gazettal in Progress	WA
Fitzgerald River	National Park	WA
Flinders Bay	Nature Reserve	WA
Gingilup Swamps	Nature Reserve	WA
Glasse Island	Nature Reserve	WA
Greater Hawke	National Park	WA
Green Island	Nature Reserve	WA
Gull Rock	National Park	WA
Hamelin Island	Nature Reserve	WA
Harry Waring Marsupial Reserve	Nature Reserve	WA
Henderson	Conservation Park	WA
Investigator Island	Nature Reserve	WA
Jerdacuttup Lakes	Nature Reserve	WA
Kalgulup	Conservation Park	WA
Kordabup	Nature Reserve	WA
Lake Shaster	Nature Reserve	WA

Protected Area Name	Reserve Type	State
Lake Warden	Nature Reserve	WA
Leeuwin-Naturaliste	National Park	WA
Len Howard	Conservation Park	WA
Leschenault Peninsula	Conservation Park	WA
Locke	Nature Reserve	WA
Marmion	Marine Park	WA
Mehniup	Nature Reserve	WA
Michaelmas Island	Nature Reserve	WA
Mistaken Island	Nature Reserve	WA
Mount Frankland South	National Park	WA
Mount Manypeaks	Nature Reserve	WA
Mount Mason	Nature Reserve	WA
Mount Shadforth	Nature Reserve	WA
Mullet Lake	Nature Reserve	WA
Ngari Capes	Marine Park	WA
NTWA Bushland covenant (0003)	Conservation Covenant	WA
NTWA Bushland covenant (0004)	Conservation Covenant	WA
NTWA Bushland covenant (0005)	Conservation Covenant	WA
NTWA Bushland covenant (0013)	Conservation Covenant	WA
NTWA Bushland covenant (0015A)	Conservation Covenant	WA
NTWA Bushland covenant (0015B)	Conservation Covenant	WA
NTWA Bushland covenant (0017)	Conservation Covenant	WA
NTWA Bushland covenant (0044A)	Conservation Covenant	WA
NTWA Bushland covenant (0044B)	Conservation Covenant	WA
NTWA Bushland covenant (0044C)	Conservation Covenant	WA
NTWA Bushland covenant (0072A)	Conservation Covenant	WA
NTWA Bushland covenant (0072B)	Conservation Covenant	WA

Protected Area Name	Reserve Type	State
NTWA Bushland covenant (0085A)	Conservation Covenant	WA
NTWA Bushland covenant (0085B)	Conservation Covenant	WA
NTWA Bushland covenant (0090)	Conservation Covenant	WA
NTWA Bushland covenant (0095)	Conservation Covenant	WA
NTWA Bushland covenant (0102)	Conservation Covenant	WA
NTWA Bushland covenant (0137)	Conservation Covenant	WA
NTWA Bushland covenant (0144)	Conservation Covenant	WA
NTWA Bushland covenant (0164)	Conservation Covenant	WA
NTWA Bushland covenant (0173)	Conservation Covenant	WA
NTWA Bushland covenant (0178)	Conservation Covenant	WA
NTWA Bushland covenant (0190)	Conservation Covenant	WA
Owingup	Nature Reserve	WA
Penguin Island	Conservation Park	WA
Point Peron	Conservation Park	WA
Point Peron Reserve	5(1)(h) Reserve	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
Rottnest Island	State Reserve	WA
Rudyard Beach	Nature Reserve	WA
Sabina	Nature Reserve	WA
Scott	National Park	WA
Seal Island (WA25645)	Nature Reserve	WA
Seal Island (WA32199)	Nature Reserve	WA
Shannon	National Park	WA

Protected Area Name	Reserve Type	State
Shark Lake	Nature Reserve	WA
Shelter Island	Nature Reserve	WA
Shoalwater Bay Islands	Nature Reserve	WA
Shoalwater Bay Islands	Nature Reserve	WA
Shoalwater Islands	Marine Park	WA
St Alouarn Island	Nature Reserve	WA
Stockdill Road	Nature Reserve	WA
Stokes	National Park	WA
Sugar Loaf Rock	Nature Reserve	WA
Swan River	Management Area	WA
Tennessee North	Nature Reserve	WA
Thomsons Lake	Nature Reserve	WA
Torndirrup	National Park	WA
Tuart Forest	National Park	WA
Two Peoples Bay	Nature Reserve	WA
Unnamed WA01086	5(1)(h) Reserve	WA
Unnamed WA04182	Nature Reserve	WA
Unnamed WA11962	5(1)(h) Reserve	WA
Unnamed WA15185	Nature Reserve	WA
Unnamed WA24309	5(1)(h) Reserve	WA
Unnamed WA24511	Nature Reserve	WA
Unnamed WA25836	Nature Reserve	WA
Unnamed WA26620	Nature Reserve	WA
Unnamed WA26885	Nature Reserve	WA
Unnamed WA27888	Nature Reserve	WA
Unnamed WA29777	Nature Reserve	WA
Unnamed WA31468	Nature Reserve	WA

Protected Area Name	Reserve Type	State
Unnamed WA32259	Nature Reserve	WA
Unnamed WA32419	Nature Reserve	WA
Unnamed WA32478	5(1)(h) Reserve	WA
Unnamed WA32601	5(1)(h) Reserve	WA
Unnamed WA33308	5(1)(h) Reserve	WA
Unnamed WA40564	Nature Reserve	WA
Unnamed WA41102	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 WA42942	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 WA44690	5(1)(h) Reserve	WA
Unnamed WA44709	5(1)(h) Reserve	WA
Unnamed WA45089	Nature Reserve	WA
Unnamed WA46661	Nature Reserve	WA
Unnamed WA46895	5(1)(h) Reserve	WA
Unnamed WA48291	Conservation Park	WA
Unnamed WA48837	Nature Reserve	WA
Unnamed WA48955	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
Unnamed WA50270	5(1)(h) Reserve	WA
Unnamed WA50574	5(1)(h) Reserve	WA
Unnamed WA50792	5(1)(h) Reserve	WA
Unnamed WA51943	5(1)(h) Reserve	WA
Unnamed WA53313	Conservation Park	WA
Unnamed WA53843	National Park	WA
Unnamed WA54326	Nature Reserve	WA
Vasse-Wonnerup Wetlands	Nature Reserve	WA
Voyagers Park	5(1)(h) Reserve	WA
Walpole And Nornalup Inlets	Marine Park	WA
Walpole-Nornalup	National Park	WA
Waychinicup	National Park	WA
West Cape Howe	National Park	WA
West Mount Mason	Nature Reserve	WA
William Bay	National Park	WA
Woody Island	Nature Reserve	WA
Woody Lake	Nature Reserve	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
South-West Forest Region of Western Australia	Western Australia

EPBC Act Referrals

[Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
25 Lot Residential Subdivision	2009/4830		Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Abercrombie Road Quarry	2023/09465		Assessment
Aerial Application of Larvicide	2010/5490		Completed
Aerial Mosquito Spraying Vasse-Wonnerup System	2005/1952		Completed
Albany Heritage Park Link Trail, WA	2019/8480		Post-Approval
Anketell Road Upgrade (Leith Road to Kwinana Freeway)	2024/09841		Assessment
Bayonet Head Residential Development, Albany, WA	2015/7624		Completed
Beale Park Redevelopment	2022/09297		Completed
Bluewaters Power Station Expansion Phases 3 & 4	2008/4113		Completed
Bunbury Hospital Redevelopment Project	2025/10104		Referral Decision
Bunbury Water Resource Recovery Scheme - Stage 2 Pipeline	2022/9145		Completed
Construct and operate a 132kV transmission line and upgrade Kemerton Terminal Si	2008/4484		Completed
Dunsborough water supply pipeline upgrade	2024/09883		Completed
Freight handling expansion, Kwinana Rail Depot	2023/09474		Assessment
Fremantle District Police Complex Project	2022/09345		Completed
Gnarabup Tourism Development: Resort and Beach Village	2022/09224		Approval
H2Perth hydrogen and ammonia project	2023/09559		Completed
Installation of additional potable water tank	2023/09518		Assessment
Kwinana Alumina Refinery ? Future Residue Storage Area	2023/09454		Completed
Land clearing for limestone quarry	2023/09558		Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Leeuwin Offshore Wind Farm	2022/9160		Assessment
Lillydale Road Widening	2023/09476		Completed
Lots 123,124& Pt Loc 170 Geographe Bay Road	2005/2317		Completed
Marina Quay Residential Development	2023/09673		Completed
Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia West	2024/09826		Completed
Monaghan's Roundabout Project - Intersection of Bussell Highway and Caves Road, Shire of Busselton	2007/3515		Completed
Outer Harbour Port Development, Kwinana	2024/09859		Assessment
Production horticulture in Lot 6 and Lot 8 Old Coast Road, Myalup	2020/8827		Assessment
Proposed Sand Extraction at Lot 601 Stanley Road, Wellesley, WA	2020/8635		Completed
Residential development, Dalyellup, WA	2023/09550		Assessment
Residential Development, Lot 522 Ditchingham Place Australind, WA	2019/8432		Completed
Residential Development, Wattleup Road, Hammond Park, WA	2021/8933		Post-Approval
Runnymede Road Sand Quarry	2022/09262		Completed
Runnymede Road Sand Quarry	2022/09332		Completed
Sand Extraction on 150 Runnymede Road Binningup	2022/09364		Assessment
Sand Extraction Project Lot 5 Wellesley Road, Wellesley Shire of Harvey	2021/9034		Approval
SMAP telecommunications submarine cable installation	2024/09989		Completed
South Thomson Development Barge Landing Development	2024/09975		Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Submarine Rotational Force ? West, Priority Infrastructure Works	2024/10031		Approval
Submarine Rotational Force ? West, Priority Infrastructure Works: Maritime Upgrades	2024/09943		Completed
Sydney Street Subdivision	2023/09530		Completed
WA Offshore Windfarm	2021/8961		Completed
Werillup Pipeline	2025/10121		Referral Decision
Controlled action			
313-316 Mimminup Road, Dalyellup	2012/6274	Controlled Action	Post-Approval
Aerial Application of Lavicide to Vasse-Wonnerup Wetlands	2010/5593	Controlled Action	Post-Approval
Airborne sonar trials	2001/540	Controlled Action	Completed
Albany Heritage Park Trail Network Concept Plan	2017/7943	Controlled Action	Completed
Albany Port Authority dredging project	2006/2540	Controlled Action	Post-Approval
Albany Ring Road Stages 2 and 3B, WA	2020/8769	Controlled Action	Post-Approval
Albemarle Lithium hydroxide manufacturing plant, Kemerton, WA	2017/8099	Controlled Action	Post-Approval
Alcoa Bauxite Residue Storage Area Extension	2011/5878	Controlled Action	Further Information Request
All weather access track road between Windy Harbour and Nelson Location 7965	2011/6121	Controlled Action	Post-Approval
Binningup Beach Residential Development, Lots 195, 304, 9003 Lakes Parade, Binningup WA	2009/5046	Controlled Action	Post-Approval
Bunbury Outer Ring Road Northern and Central Section Project, WA	2019/8471	Controlled Action	Post-Approval
Bunbury Outer Ring Road Southern Section	2012/6652	Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Bunbury Outer Ring Road Southern Section project, WA	2019/8543	Controlled Action	Final PD
Bunbury Port Berth 14A Expansion & Coal Storage & Loading Facility, WA	2014/7200	Controlled Action	Post-Approval
Bussell Highway - Capel to Hutton Section, WA	2015/7626	Controlled Action	Post-Approval
Bussell Highway Duplication Hutton to Sabina	2020/8800	Controlled Action	Post-Approval
Busselton Foreshore Redevelopment from West Street to Ford Road	2013/6830	Controlled Action	Post-Approval
Capecare, urban and commercial new development, Aged Care - Naturaliste Terrace, Dunsborough, WA	2006/2834	Controlled Action	Post-Approval
Cape View Resort at Lot 190 Little Colin Street	2006/3070	Controlled Action	Post-Approval
Clear 2.86 ha of native vegetation for the purpose of horticulture	2010/5655	Controlled Action	Post-Approval
Clearing for Bunbury Airport Expansion, WA	2013/6872	Controlled Action	Post-Approval
Clearing of Lots 2 and 10 Rowley Road, Mandogalup WA	2018/8182	Controlled Action	Assessment Approach
Construction of a Deepwater, General Container Port	2009/5178	Controlled Action	Proposed Decision
Construction of New Perth Bunbury Highway project	2005/2193	Controlled Action	Post-Approval
Construction of new sporting field	2007/3333	Controlled Action	Post-Approval
Dalyellup Beach Estate - Residential Development	2007/3361	Controlled Action	Post-Approval
Dawson Beach Estate Stage 2	2005/2153	Controlled Action	Post-Approval
Development Guide Plan for 46 ha Residential Subdivision	2008/4102	Controlled Action	Post-Approval
Development of Busselton Health Campus	2011/6011	Controlled Action	Post-Approval
Development of Kwinana Quay port facility	2008/4387	Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Development of Lot 9018 Martingale Road and Lot 377 Clinker Drive, Dunsborough, WA	2018/8278	Controlled Action	Further Information Request
Develop three sites into residential housing and mixed use developments, Western Australia	2013/6916	Controlled Action	Post-Approval
Develop Trails and a Wetlands Demonstration Site and Centre	2008/4439	Controlled Action	Post-Approval
Eastern Link Project, Busselton WA	2018/8155	Controlled Action	Post-Approval
Emu Point Residential Area Project	2010/5479	Controlled Action	Completed
Extension of Beeliar Drive between the junction of Mayor and Fawcett Roads an...	2003/1029	Controlled Action	Completed
Flat Rock boating facility	2008/4506	Controlled Action	Post-Approval
Grain Receivals Depot	2001/170	Controlled Action	Post-Approval
Halls Head Shopping Centre stages 2 & 3 expansion	2010/5636	Controlled Action	Post-Approval
Industry Zone	2010/5337	Controlled Action	Post-Approval
Latitude 32-industrial development of various lots, Ashley and Sayer Roads, Hope Valley, WA	2016/7695	Controlled Action	Post-Approval
Lennox Weir Removal, 12kms west Busselton	2021/8915	Controlled Action	Assessment Approach
Lot 2 Corner Durrant Avenue and Sicklemore Road - Residential Development	2011/5882	Controlled Action	Completed
Lot 4 Runnymede Road, Wellesley - Proposed Sand Extraction	2020/8862	Controlled Action	Assessment Approach
Lot 505 Hungerford Avenue, Halls Head, WA Residential Development	2009/4789	Controlled Action	Post-Approval
Lower Vasse River Sediment Removal	2021/9051	Controlled Action	Post-Approval
Mandurah Junction Commercial and Residential Development	2010/5410	Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Mangles Bay Marina Based Tourist Precinct	2010/5659	Controlled Action	Post-Approval
Milyeannup Wind Farm	2009/4911	Controlled Action	Post-Approval
Mixed Use Residential and Commercial Development	2009/4919	Controlled Action	Post-Approval
Natural Gas Pipeline Expansion	2006/2813	Controlled Action	Post-Approval
Neighbourhood Shopping Centre and Mixed Business Centre, Ocean Road, Dawesville	2006/3155	Controlled Action	Post-Approval
Old Broadwater Farm Estate Subdivision - Stage 3	2009/5231	Controlled Action	Post-Approval
Parklands West Estate Development	2010/5693	Controlled Action	Post-Approval
Peel's Retreat Estate - Residential development	2006/3063	Controlled Action	Post-Approval
Peppermint Park Residential Subdivision - Stage 5	2008/4028	Controlled Action	Post-Approval
Plantagenet Location 1181, Cape Riche	2001/158	Controlled Action	Completed
Point Grey Marina Project	2010/5515	Controlled Action	Post-Approval
Point Grey Residential Development - Terrestrial Component	2011/5825	Controlled Action	Post-Approval
Proposed excavation and earthworks at existing quarry, prior to subdivision	2008/4562	Controlled Action	Completed
Proposed Urban Development	2008/3984	Controlled Action	Post-Approval
Ravensthorpe Nickel Project	2001/172	Controlled Action	Post-Approval
Residential/Industrial subdivision, Lot 18, Vasse Highway, Shire of Busselton	2006/3208	Controlled Action	Post-Approval
Residential Development	2007/3463	Controlled Action	Post-Approval
Residential development, College Grove, WA	2015/7579	Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Residential Development, Lot 3 & 4 Dorsett Street	2006/2774	Controlled Action	Completed
Residential development, Lots 21 and 100 Southern Estuary Road, Herron, WA	2017/8135	Controlled Action	Completed
Residential development Lot 3, 500 Bussell Highway, WA	2013/7098	Controlled Action	Post-Approval
Residential development Lots 8 & 9 King Street	2006/2787	Controlled Action	Completed
Residential subdivision, Lot 501 Vasse Hwy, Yalyalup, WA	2018/8244	Controlled Action	Post-Approval
retirement units & aged care facility development	2007/3533	Controlled Action	Post-Approval
Roe Highway extension, Kwinana Freeway to Stock Road, WA	2009/5031	Controlled Action	Post-Approval
Rural Subdivision of a 975.2ha property	2004/1635	Controlled Action	Completed
Sand and limestone extraction	2003/1284	Controlled Action	Completed
Sand and Limestone Extraction on Lots 313 and 314, Harewoods Road	2005/2291	Controlled Action	Completed
Sand Mine, Lot 122 Old Coast Road, Parkfield, Binningup, WA	2014/7164	Controlled Action	Post-Approval
Sand Mining on Lot 7 Runnymede Road	2011/5996	Controlled Action	Post-Approval
Shark Hazard Mitigation Drum Line Program, WA	2014/7174	Controlled Action	Completed
Shenton Park Subdivision	2004/1479	Controlled Action	Completed
Smiths Beach Project, Yallingup - Coastal Tourism Village	2021/9141	Controlled Action	Referral Publication
Somerville Drive Extension	2011/6153	Controlled Action	Post-Approval
Southdown Magnetite Mine	2006/2544	Controlled Action	Completed
Southdown Magnetite Project	2011/6053	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Southern Bluefin Tuna Farm	2005/2165	Controlled Action	Completed
Southern Seawater Desalination Project	2008/4173	Controlled Action	Post-Approval
Subdivision Lot 1 Dawesville Rd	2005/2394	Controlled Action	Post-Approval
Three Turning Pockets West of Busselton Townsite	2002/846	Controlled Action	Post-Approval
Tourism Villa Facility Development	2008/4025	Controlled Action	Post-Approval
tourist and residential development	2007/3483	Controlled Action	Post-Approval
Upgrade of Ford Road	2005/2113	Controlled Action	Completed
Urban development, multiple lots Northerly Street, Vasse, WA	2019/8494	Controlled Action	Assessment Approach
Urban Development Ravendale Drive, Coodanup Drive & Wanjeep Street	2011/5928	Controlled Action	Post-Approval
Vasse Diversion Drain Upgrade	2017/7932	Controlled Action	Post-Approval
Warders Hotel, Block 1 Warders Cottages, Fremantle, WA	2018/8144	Controlled Action	Post-Approval
Wonnerup South Mineral Sands Project, Yalyalup, WA	2014/7135	Controlled Action	Post-Approval
Wonnerup Titanium Mineral Mining Project	2010/5403	Controlled Action	Post-Approval
Yarragadee Water Supply Development	2005/2073	Controlled Action	Completed
Not controlled action			
'Looping 10' gas transmission pipeline from Kwinana to Hopelands	2005/2212	Not Controlled Action	Completed
4wd coastal track stabilisation & rehabilitation, Bettys Beach Reserve, WA	2013/7087	Not Controlled Action	Completed
9 lot 40.4407 ha rural residential subdivision development 1181 Sandalwood Rd, Wellstead	2007/3451	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Aerial application of mosquito larvicides to Vasse Wonnerup Wetlands, WA	2016/7780	Not Controlled Action	Completed
Albany Port Maintenance Dredging, Albany, WA	2014/7246	Not Controlled Action	Completed
Anzac Centre Develpment, Albany, WA	2012/6571	Not Controlled Action	Completed
Anzac Interpretive Centre Development, Albany, WA	2013/6903	Not Controlled Action	Completed
APX-West Fibre-optic telecommunications cable system, WA to Singapore	2013/7102	Not Controlled Action	Completed
Bibra Lake Aboriginal Cultural Centre Development	2020/8642	Not Controlled Action	Completed
Bunbury Water Resources Recovery Scheme-Recycled Water Treatment Plant	2021/8986	Not Controlled Action	Completed
Bushfire Mitigation Works - City of Mandurah	2020/8674	Not Controlled Action	Completed
Busselton-Margaret River Regional Airport Development Project, WA	2016/7675	Not Controlled Action	Completed
Busselton to Flinders Bay Rails to Trails Project, WA	2013/6835	Not Controlled Action	Completed
Cape Naturaliste Road Shared Pathway, Dunsborough, WA	2018/8282	Not Controlled Action	Completed
Causeway Bridge Duplication, Busselton, WA	2018/8309	Not Controlled Action	Completed
Caves Road and Cape Naturaliste Road Intersection Upgrade	2012/6395	Not Controlled Action	Completed
Caves Road widening project between Dunsborough and Yallingup(20.3 -24.6 SLK), WA	2015/7475	Not Controlled Action	Completed
Clearing and development of 220 and 234 Wattleup Rd, Wattleup, WA	2016/7738	Not Controlled Action	Completed
Clear Lot 503, 54 Ocean Road Dawesville, WA	2014/7375	Not Controlled Action	Completed
Construction and operation of an 8 turbine wind farm at Rous Head Harbour, Frema	2003/933	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Construction of a water soak dam for fire suppression Lot 304 Rest Point Road, Walpole, WA	2014/7409	Not Controlled Action	Completed
Construction of Secret Harbour High School	2004/1489	Not Controlled Action	Completed
CTBT - Cape Leeuwin Hydroacoustic Station Proposal	2000/27	Not Controlled Action	Completed
Demolish and replace Old Mandurah Traffic Bridge, Mandurah, WA	2015/7415	Not Controlled Action	Completed
Development of Grasmere Wind Farm	2008/4368	Not Controlled Action	Completed
Development of Lots 100-101 Sayer Road, Hope Valley, WA	2019/8399	Not Controlled Action	Completed
Disposal of residential properties, Fremantle, WA	2019/8593	Not Controlled Action	Completed
Earthworks and Excavation of Lots 2, 13 & 22 Old Coast Road	2009/5101	Not Controlled Action	Completed
Eastport canal estate development stage 5	2007/3737	Not Controlled Action	Completed
Establishment of a National Lifestyle Village	2011/6081	Not Controlled Action	Completed
Expansion of berthing facilities at Kwinana Bulk Terminal	2006/2509	Not Controlled Action	Completed
Expansion of existing Ammonium Nitrate Production Facility	2005/1941	Not Controlled Action	Completed
Expedition 369-Australian Cretaceous Climate and Tectonics, Australian EEZ waters	2017/7891	Not Controlled Action	Completed
Extension of Brittain Road to connect with the South Western Hwy/Robertson Drive intersection	2007/3707	Not Controlled Action	Completed
Extension of commercial sand extraction operation, Shire of Capel WA	2003/1250	Not Controlled Action	Completed
Extension of Existing Limestone Quarry at Lot 5 Old Coast Road	2006/2831	Not Controlled Action	Completed
Florida Estate Residential Subdivision Development Stage 13	2011/6045	Not Controlled Action	Completed
Florida North residential development, Lot 9008, Ocean	2015/7462	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Road, Dawesville, WA			
Fremantle Ports Inner Harbour Capital Dredging Proposal	2005/2477	Not Controlled Action	Completed
Gas-fired Power Station	2005/2213	Not Controlled Action	Completed
Geo-science Investigations	2005/2069	Not Controlled Action	Completed
Hammond West Urban Development, Hammond Park, WA	2017/7917	Not Controlled Action	Completed
Hope Valley-Wattleup Redevelopment Project	2020/8644	Not Controlled Action	Completed
Horizontal drilling from Lot 35 Ballarat Rd under Wonnerup Inlet	2004/1354	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
Industrial development, Lot 561 Paris Road, Australind, WA	2016/7712	Not Controlled Action	Completed
Industrial development 105 Sayer Road, Hope Valley, WA	2014/7261	Not Controlled Action	Completed
Industrial Development Lot 64 Ashley Road, Hope Valley, WA	2014/7238	Not Controlled Action	Completed
Kemerton Lateral Gas Pipeline Project	2005/2388	Not Controlled Action	Completed
Kennedy Bay urban development, Port Kennedy, WA	2014/7122	Not Controlled Action	Completed
Kennedy Park Estate Residential Development	2003/1044	Not Controlled Action	Completed
Kwinana Depot Upgrade	2011/6035	Not Controlled Action	Completed
Kwinana Gas-Fired Power Station	2005/2101	Not Controlled Action	Completed
larvaciding of potential mosquito breeding wetlands	2006/2601	Not Controlled Action	Completed
Latitude 32 industrial development 6A, Cockburn, WA	2018/8193	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Limestone quarry expansion	2005/2268	Not Controlled Action	Completed
Limestone Quarry Expansion, Lots 3618 and 1794, Finn Road	2005/2332	Not Controlled Action	Completed
Limestone quarry mining	2006/2942	Not Controlled Action	Completed
Lot 101 Mandurah Road, Madora Bay, WA	2012/6466	Not Controlled Action	Completed
Lot 170 Hope Valley Road, Hope Valley	2020/8830	Not Controlled Action	Completed
Lot 200 Caves Road Tourist Accommodation	2020/8775	Not Controlled Action	Completed
Mandurah Quay Residential Development	2010/5754	Not Controlled Action	Completed
Mount Barker to Albany Water Supply Pipeline	2013/6720	Not Controlled Action	Completed
New automotive centre at the Southwest Institute of Technology, Bunbury, WA	2010/5766	Not Controlled Action	Completed
Oman Australia Cable Installation, WA	2021/8922	Not Controlled Action	Completed
Oman Australia Cable - Marine Route Survey	2020/8731	Not Controlled Action	Completed
Palm Beach Caravan Park Redevelopment, Rockingham, WA	2013/6853	Not Controlled Action	Completed
Perth Desalination Plant 2	2019/8454	Not Controlled Action	Completed
Perth Seawater Desalination Project: Thomsons Lake to Kogolup Pipeline	2005/1971	Not Controlled Action	Completed
Port of Esperance Maintenance Dredging, WA	2013/6822	Not Controlled Action	Completed
Proposed Expansion of Existing Gracetown Townsite & Upgrade of Existing Associa	2010/5358	Not Controlled Action	Completed
Proposed Fuel Reduction Burn, Loughton Park, Bunbury, WA	2014/7148	Not Controlled Action	Completed
Protected Harbour Development	2006/3091	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Redevelopment of Lots 3 & 4, Kent Street	2007/3243	Not Controlled Action	Completed
Redevelopment of Purvis Street school site, Hamilton Hill, WA	2018/8255	Not Controlled Action	Completed
Replacement Floodgates	2003/1010	Not Controlled Action	Completed
Residential & Light Industrial Development, Vasse WA	2013/6932	Not Controlled Action	Completed
Residential development, Lot 42, Farmhouse Court, Bovell, WA	2014/7195	Not Controlled Action	Completed
Residential development, Lot 74 Wattleup Road, Hammond Park, WA	2018/8273	Not Controlled Action	Completed
Residential development, Lots 120-121 Minninup Road, Dalyellup WA	2018/8254	Not Controlled Action	Completed
Residential Development - Assorted Lots Parade Rd, Washington Av & Bussell Hwy, Usher WA	2013/6935	Not Controlled Action	Completed
Residential Development of Lots 76 and 107 Wattleup Road, Hamond Park	2020/8865	Not Controlled Action	Completed
Residential development on part of Lot 2 Fanstone Avenue, Beeliar, WA	2016/7726	Not Controlled Action	Completed
Residential-Rural Subdivision, Lot 1 Kudardup Rd, Kudardup, WA	2012/6471	Not Controlled Action	Completed
Residential Subdivision, Lot 90 Leisure Way, Halls Head, WA	2018/8175	Not Controlled Action	Completed
Re-zoning of Land for Future Residential Development Purposes	2009/4908	Not Controlled Action	Completed
Rezoning of Lot 31, 80-lot Residential Subdivision	2008/4680	Not Controlled Action	Completed
Roe Highway - Karel Avenue to Hope Road Bridge Project	2005/2061	Not Controlled Action	Completed
Rottnest Lodge Redevelopment	2019/8565	Not Controlled Action	Completed
Rural Residential Development Lot 7 Dunkeld Drive, Herron, WA	2014/7340	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Sand Extraction, Lot 265 Ducane Road, Gelorup, WA	2012/6616	Not Controlled Action	Completed
Scuttling of the HMAS Perth	2001/171	Not Controlled Action	Completed
Secondary School Campus Development at Lot 150 Leisure Drive, Australind	2013/6744	Not Controlled Action	Completed
Seismic Survey, Bremer Basin, Mentelle Basin and Zeewyck Sub-basin	2004/1700	Not Controlled Action	Completed
Sepia Depression Ocean Outlet Landline Duplication	2012/6248	Not Controlled Action	Completed
Stanley Road waste management facility, Wellesley, WA	2014/7131	Not Controlled Action	Completed
Tea Tree Planting, Walpole region, WA	2019/8397	Not Controlled Action	Completed
Titanium Mining	2001/340	Not Controlled Action	Completed
Urban development, Lot 109 Wattleup Road, Hammond Park, WA	2015/7425	Not Controlled Action	Completed
Urban development of Lot 107 Wattleup Road, Hammond Park, WA	2017/7890	Not Controlled Action	Completed
urban residential development	2006/2924	Not Controlled Action	Completed
Vasse Hotel and Supermarket Redevelopment	2001/288	Not Controlled Action	Completed
Vegetation Clearance for Horticulture Operation Expansion, Lot 2, Springfield Rd, Parkfield, WA	2014/7196	Not Controlled Action	Completed
Vegetation clearing for sand extraction, Lot 268 Leeuwin Road, Augusta	2013/6860	Not Controlled Action	Completed
Warders' Cottages Block 2 'W2'	2022/9148	Not Controlled Action	Completed
Warders' Cottages W2 minor works, Fremantle, WA	2018/8185	Not Controlled Action	Completed
Wind Farm development	2005/2105	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Woodcrest Rise Estate Residential Development	2007/3794	Not Controlled Action	Completed
Not controlled action (particular manner)			
2D seismic survey	2008/4493	Not Controlled Action (Particular Manner)	Post-Approval
2D seismic survey	2007/3273	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey Within WA-382-P	2007/3799	Not Controlled Action (Particular Manner)	Post-Approval
Ambergate North Residential Development	2009/4802	Not Controlled Action (Particular Manner)	Post-Approval
Arcadia Petroleum - BR12 3D Marine Seismic Survey	2012/6476	Not Controlled Action (Particular Manner)	Post-Approval
Australian Underwater Discovery Centre	2021/9019	Not Controlled Action (Particular Manner)	Post-Approval
Australia to Singapore Fibre Optic Submarine Cable System	2011/6127	Not Controlled Action (Particular Manner)	Post-Approval
Australind Piggery expansion	2014/7117	Not Controlled Action (Particular Manner)	Post-Approval
Bremer Basin 2D Marine Seismic Survey, WA	2009/5013	Not Controlled Action (Particular Manner)	Post-Approval
CETO 6 Garden Island Project, offshore WA	2016/7635	Not Controlled Action (Particular Manner)	Post-Approval
CETO 6 Geophysical and Geotechnical Surveys	2014/7408	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
City of Cockburn Sporting Facilties	2005/2139	Not Controlled Action (Particular Manner)	Post-Approval
Construction of Mandurah Entrance Road	2009/4692	Not Controlled Action (Particular Manner)	Post-Approval
Construction of urea production plant and supporting infrastructure	2009/5067	Not Controlled Action (Particular Manner)	Post-Approval
Coodanup residential development	2006/3073	Not Controlled Action (Particular Manner)	Post-Approval
Country Road Estate - Final Stage Development	2006/3095	Not Controlled Action (Particular Manner)	Post-Approval
Dalyellup Beach Estate Stages 12 and 14, near Bunbury	2004/1726	Not Controlled Action (Particular Manner)	Post-Approval
Dalyellup Beach Estate - Stages 13 and 16	2006/3075	Not Controlled Action (Particular Manner)	Post-Approval
Extension and Renewal of Existing Sand Quarry	2008/4326	Not Controlled Action (Particular Manner)	Post-Approval
Extension of existing mains water supply pipeline	2009/4686	Not Controlled Action (Particular Manner)	Post-Approval
Extension of Spearwood Ave, from Barrington Rd to Miguel Rd	2009/5140	Not Controlled Action (Particular Manner)	Post-Approval
Grand Southern Margin 2D Marine Seismic Survey	2008/4599	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Lake Richmond Boardwalk installation, Rockingham, WA	2013/6977	Not Controlled Action (Particular Manner)	Post-Approval
Laying a submarine optical fibre telecommunications cable, Perth to Singapore and Jakarta	2014/7332	Not Controlled Action (Particular Manner)	Post-Approval
Limestone Extraction on Lot 5 Old Coast Road, Myalup, WA	2012/6468	Not Controlled Action (Particular Manner)	Post-Approval
Marine Environmental Survey	2012/6275	Not Controlled Action (Particular Manner)	Post-Approval
McCourt Hills Estate Stage 3	2006/2760	Not Controlled Action (Particular Manner)	Post-Approval
Multipurpose development stage 1 within 340ha	2004/1913	Not Controlled Action (Particular Manner)	Post-Approval
Novacare Lifestyle Village	2001/311	Not Controlled Action (Particular Manner)	Post-Approval
Road upgrades and walk trail development	2009/4958	Not Controlled Action (Particular Manner)	Post-Approval
Sand and Limestone Extraction on Lots 313 and 314, Harewoods Road	2005/2346	Not Controlled Action (Particular Manner)	Post-Approval
South Busselton Primary School	2001/290	Not Controlled Action (Particular Manner)	Post-Approval
South West Metropolitan Railway Project	2003/1175	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Stratham Park Estate Subdivision - Lots 70, 11 and 12	2008/4068	Not Controlled Action (Particular Manner)	Post-Approval
Subdivision and development of residential dwelling on part Lot 1, Bussell Highw	2006/3023	Not Controlled Action (Particular Manner)	Post-Approval
Widening of Ludlow North Road Between Peppermint Grove Road and Mallokup Road	2009/5242	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
3D Marine Seismic survey	2007/3725	Referral Decision	Completed
3D Seismic Survey	2012/6245	Referral Decision	Completed
Albany Port Maintenance Dredging	2010/5527	Referral Decision	Completed
Ambergate North Residential Community (4896 lots)	2008/4617	Referral Decision	Completed
Bunbury Port Berth 14 Development, Bunbury Port Inner Harbour	2011/6023	Referral Decision	Completed
Bunbury WRRS - Stage 2 Pipeline	2021/9092	Referral Decision	Completed
CO2 3D Seismic Survey Vlaming Sub-Basin	2012/6343	Referral Decision	Completed
Grand Southern Margin 2D Marine Seismic Survey	2008/4573	Referral Decision	Completed
Harvesting of Pinus Radiata Plantation	2010/5414	Referral Decision	Completed
Kennedy Bay Urban Development,PortKennedy,Rockingh	2013/7022	Referral Decision	Completed
Lots 1-5 Bluerise Cove & Lots 801 & 124 Pleasant Grove Rezoning and Subdivision	2008/4295	Referral Decision	Completed
Narelle 3D Marine Seismic Survey	2008/4575	Referral Decision	Completed
Residential Subdivision Lot 801 Pleasant Grove Circle, Falcon, WA	2012/6507	Referral Decision	Referral Publication

Title of referral	Reference	Referral Outcome	Assessment Status
Referral decision			
Rezoning of Crown Reserve 39181 to facilitate future residential development	2005/2096	Referral Decision	Completed
Riverbank and Country Road Estates Lot 43 Bussell Highway	2005/2367	Referral Decision	Completed
Sonar Trials and Acoustic Trials	2001/538	Referral Decision	Completed
Water quality improvement trial, Lower Vasse River, Busselton, WA	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
Albany Canyons group and adjacent shelf break	South-west
Ancient coastline at 90-120m depth	South-west
Cape Mentelle upwelling	South-west
Commonwealth marine environment surrounding the Recherche Archipelago	South-west
Commonwealth marine environment within and adjacent to Geographe Bay	South-west
Commonwealth marine environment within and adjacent to the west coast inshore lagoons	South-west
Diamantina Fracture Zone	South-west
Naturaliste Plateau	South-west
Perth Canyon and adjacent shelf break, and other west coast canyons	South-west
Western demersal slope and associated fish communities	South-west
Western rock lobster	South-west

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence
Seabirds		
Ardenna carneipes		
Flesh-footed Shearwater [82404]	Foraging	Known to occur

Scientific Name	Behaviour	Presence
Ardenna carneipes Flesh-footed Shearwater [82404]	Foraging	Known to occur
Ardenna pacifica Wedge-tailed Shearwater [84292]	Foraging	Known to occur
Ardenna pacifica Wedge-tailed Shearwater [84292]	Reproduction	Known to occur
Ardenna tenuirostris Short-tailed Shearwater [82652]	Foraging	Known to occur
Eudyptula minor Little Penguin [1085]	Foraging	Likely to occur
Hydroprogne caspia Caspian Tern [808]	Foraging	Known to occur
Larus pacificus Pacific Gull [811]	Foraging	Known to occur
Onychoprion anaethetus Bridled Tern [82845]	Foraging	Likely to occur
Onychoprion fuscatus Sooty Tern [90682]	Foraging	Known to occur
Pelagodroma marina White-faced Storm-petrel [1016]	Foraging	Known to occur
Phalacrocorax fuscescens Black-faced Cormorant [59660]	Foraging	Likely to occur
Pterodroma macroptera macroptera Great-winged Petrel (macroptera race) [1035]	Foraging	Known to occur
Pterodroma mollis Soft-plumaged Petrel [1036]	Foraging	Known to occur
Puffinus assimilis Little Shearwater [59363]	Foraging	Likely to occur
Sterna dougallii Roseate Tern [817]	Foraging	Known to occur

Scientific Name	Behaviour	Presence
[Sternula nereis](#) Fairy Tern [82949]	Foraging	Known to occur
[Thalassarche carteri](#) Indian Yellow-nosed Albatross [64464]	Foraging	Likely to occur
Seals		
[Neophoca cinerea](#) Australian Sea Lion [22]	Foraging	Likely to occur
Sharks		
[Carcharodon carcharias](#) White Shark [64470]	Foraging	Known to occur
Whales		
[Balaenoptera musculus](#) Blue and Pygmy Blue Whale [36]	Foraging	Known to occur
[Balaenoptera musculus brevicauda](#) Pygmy Blue Whale [81317]	Foraging	Likely to be present
[Balaenoptera musculus brevicauda](#) Pygmy Blue Whale [81317]	Migration	Known to occur
[Eubalaena australis](#) Southern Right Whale [40]	Migration	
[Eubalaena australis](#) Southern Right Whale [40]	Reproduction	
[Megaptera novaeangliae](#) Humpback Whale [38]	Migration	Known to occur
[Physeter macrocephalus](#) Sperm Whale [59]	Foraging	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 is 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 on the contents of this report.

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 point locations and environmental data layers.

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 when time permits.

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 breeding sites; and
- 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: 25-Jun-2026

Summary
Details
Matters of NES
Other Matters Protected by the EPBC Act
Extra Information
Caveat
Acknowledgements

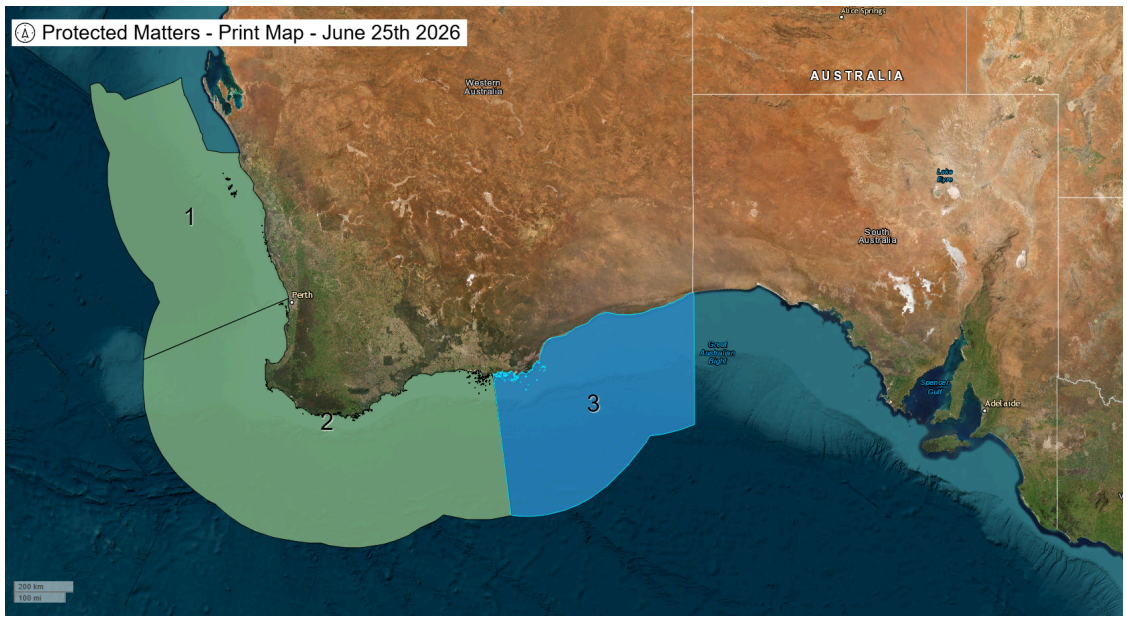


Figure 1: South West Marine Region - East (Part 3)

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	1
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	3
Listed Threatened Ecological Communities:	2
Listed Threatened Species:	60
Listed Migratory Species:	70

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	98
Whales and Other Cetaceans:	35
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	7
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	10
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	13
Key Ecological Features (Marine):	3
Biologically Important Areas:	18
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

National Heritage Places [Resource Information]

Name	State	Legal Status
Indigenous		
Cheetup Rock Shelter	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)
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
Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia	Endangered	Community likely to occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	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		
Aphelocephala leucopsis		
Southern Whiteface [529]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Species or species habitat likely to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Species or species habitat likely to occur within area
Cereopsis novaehollandiae grisea Cape Barren Goose (south-western), Recherche Cape Barren Goose [25978]	Vulnerable	Breeding likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat likely to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Endangered	Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Species or species habitat likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area
Pezoporus flaviventris Western Ground Parrot, Kyloring [84650]	Critically Endangered	Species or species habitat likely to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Species or species habitat likely to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Breeding likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
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 likely to occur within area
Xenus cinereus		
Terek Sandpiper [59300]	Vulnerable	Species or species habitat likely to occur within area
Zanda latirostris listed as Calyptorhynchus latirostris		
Carnaby's Black Cockatoo, Short-billed Black-cockatoo [87737]	Endangered	Species or species habitat likely to occur within area
FISH		
Hoplostethus atlanticus		
Orange Roughy, Deep-sea Perch, Red Roughy [68455]	Conservation Dependent	Species or species habitat likely to occur within area
Seriolella brama		
Blue Warehou [69374]	Conservation Dependent	Species or species habitat likely to occur within area
MAMMAL		
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Dasyurus geoffroii		
Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
[Eubalaena australis](#) Southern Right Whale [40]	Endangered	Breeding likely to occur within area
[Neophoca cinerea](#) Australian Sea-lion, Australian Sea Lion [22]	Endangered	Breeding known to occur within area
[Petrogale lateralis hacketti](#) Recherche Rock-wallaby [66849]	Vulnerable	Species or species habitat likely to occur within area
[Petrogale lateralis lateralis](#) Black-flanked Rock-wallaby, Moororong, Black-footed Rock Wallaby [66647]	Endangered	Translocated population known to occur within area
PLANT		
[Adenanthos eyrei](#) Toolinna Adenanthos [7763]	Endangered	Species or species habitat likely to occur within area
[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
[Eucalyptus insularis](#) Twin Peak Island Mallee [3057]	Endangered	Species or species habitat likely to occur within area
[Lambertia echinata subsp. echinata](#) Prickly Honeysuckle [56729]	Endangered	Species or species habitat likely to occur within area
[Ricinocarpos trichophorus](#) Barrens Wedding Bush [19931]	Endangered	Species or species habitat may occur within area
REPTILE		
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
SHARK		
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Centrophorus uyato Little Gulper Shark [68446]	Conservation Dependent	Species or species habitat likely to occur within area
Galeorhinus galeus Tope, Flake, Oil Shark, School Shark [68453]	Conservation Dependent	Species or species habitat likely to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Ardenna tenuirostris Short-tailed Shearwater [82652]		Breeding likely to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Hydroprogne caspia Caspian Tern [808]		Breeding likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Onychoprion anaethetus Bridled Tern [82845]		Foraging, feeding or related behaviour likely to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
Migratory Marine Species		
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharias taurus Grey Nurse Shark [64469]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Breeding likely to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat likely to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Foraging, feeding or related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text
[Rhincodon typus](#) Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
[Motacilla cinerea](#) Grey Wagtail [642]		Species or species habitat may occur within area
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat likely to occur within area
[Arenaria interpres](#) Ruddy Turnstone [872]	Vulnerable	Species or species habitat likely to occur within area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area
[Calidris alba](#) Sanderling [875]		Species or species habitat likely to occur within area
[Calidris canutus](#) Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
[Calidris falcinellus as Limicola falcinellus](#) Broad-billed Sandpiper [91731]		Species or species habitat likely to occur within area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Calidris ruficollis Red-necked Stint [860]		Species or species habitat likely to occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Species or species habitat likely to occur within area
Charadrius bicinctus Double-banded Plover [895]		Species or species habitat likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat likely to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat likely to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area

Scientific Name	Threatened Category	Presence Text
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Phalaropus lobatus Red-necked Phalarope [838]		Species or species habitat likely to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Species or species habitat likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Species or species habitat likely to occur within area
Thalasseus bergii Greater Crested Tern [83000]		Breeding likely to occur within area
Tringa brevipes Grey-tailed Tattler [851]		Species or species habitat likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Species or species habitat likely to occur within area
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
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 grisea as Puffinus griseus Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Ardenna tenuirostris as Puffinus tenuirostris Short-tailed Shearwater [82652]		Breeding likely to occur within area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Species or species habitat likely 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	Species or species habitat likely to occur within area
Calidris alba Sanderling [875]		Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area overfly marine area
Calidris falcinellus as Limicola falcinellus Broad-billed Sandpiper [91731]		Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Calidris ruficollis Red-necked Stint [860]		Species or species habitat likely to occur within area overfly marine area
Calidris tenuirostris Great Knot [862]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Cereopsis novaehollandiae grisea Cape Barren Goose (south-western), Recherche Cape Barren Goose [25978]	Vulnerable	Breeding likely to occur within area overfly marine area
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]		Species or species habitat likely to occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat likely to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat likely to occur within area overfly marine area
Chroicocephalus novaehollandiae as Larus novaehollandiae Silver Gull [82326]		Breeding likely to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Eudyptula minor Little Penguin [1085]		Breeding likely to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
[Halobaena caerulea](#) Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
[Himantopus himantopus](#) Pied Stilt, Black-winged Stilt [870]		Species or species habitat likely to occur within area overfly marine area
[Hydroprogne caspia as Sterna caspia](#) Caspian Tern [808]		Breeding likely to occur within area
[Larus pacificus](#) Pacific Gull [811]		Breeding likely to occur within area
[Limosa lapponica](#) Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
[Limosa limosa](#) Black-tailed Godwit [845]	Endangered	Species or species habitat likely to occur within area overfly marine area
[Macronectes giganteus](#) Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
[Macronectes halli](#) Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[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 may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area overfly marine area
Onychoprion anaethetus as Sterna anaethetus Bridled Tern [82845]		Foraging, feeding or related behaviour likely to occur within area
Onychoprion fuscatus as Sterna fuscata Sooty Tern [90682]		Breeding likely to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Pelagodroma marina White-faced Storm-Petrel [1016]		Breeding likely to occur within area
Phalacrocorax fuscescens Black-faced Cormorant [59660]		Breeding likely to occur within area
Phalaropus lobatus Red-necked Phalarope [838]		Species or species habitat likely to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Pluvialis fulva Pacific Golden Plover [25545]		Species or species habitat likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Species or species habitat likely 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 likely to occur within area overfly marine area
Stercorarius antarcticus as Catharacta skua Brown Skua [85039]		Species or species habitat may occur within area
Sternula nereis as Sterna nereis Fairy Tern [82949]		Breeding likely 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

Scientific Name	Threatened Category	Presence Text
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
Thalasseus bergii as Sterna bergii Greater Crested Tern [83000]		Breeding likely to occur within area
Thinornis cucullatus as Thinornis rubricollis Hooded Plover, Hooded Dotterel [87735]		Species or species habitat likely to occur within area overfly marine area
Tringa brevipes as Heteroscelus brevipes Grey-tailed Tattler [851]		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 overfly marine area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Species or species habitat likely to occur within area overfly marine area
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Fish		
Campichthys galei Gale's Pipefish [66191]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
Histiogamphelus cristatus Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area
Idiotropiscis australe as Acentronura australe Southern Pygmy Pipehorse [74958]		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 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
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
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
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 likely to occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Breeding known to occur within area
Reptile		

Scientific Name	Threatened Category	Presence Text
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely 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 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 may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Berardius arnuxii Arnoux's Beaked Whale [70]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
[Caperea marginata](#) Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area
[Delphinus delphis](#) Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
[Eubalaena australis](#) Southern Right Whale [40]	Endangered	Breeding likely to occur within area
[Feresa attenuata](#) Pygmy Killer Whale [61]		Species or species habitat may occur within area
[Globicephala macrorhynchus](#) Short-finned Pilot Whale [62]		Species or species habitat may occur within area
[Globicephala melas](#) Long-finned Pilot Whale [59282]		Species or species habitat may occur within area
[Grampus griseus](#) Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
[Hyperoodon planifrons](#) Southern Bottlenose Whale [71]		Species or species habitat may occur within area
[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
[Lagenorhynchus obscurus](#) Dusky Dolphin [43]		Species or species habitat likely to occur within area

Current Scientific Name	Status	Type of Presence
Lissodelphis peronii Southern Right Whale Dolphin [44]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area
Mesoplodon bowdoini Andrew's Beaked Whale [73]		Species or species habitat may occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Mesoplodon ginkgodens Gingko-toothed Beaked Whale, Gingko-toothed Whale, Gingko Beaked Whale [59564]		Species or species habitat may occur within area
Mesoplodon grayi Gray's Beaked Whale, Scamperdown Whale [75]		Species or species habitat may occur within area
Mesoplodon hectori Hector's Beaked Whale [76]		Species or species habitat may occur within area
Mesoplodon layardii Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale [25556]		Species or species habitat may occur within area
Mesoplodon mirus True's Beaked Whale [54]		Species or species habitat may occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Physeter macrocephalus Sperm Whale [59]		Foraging, feeding or related behaviour known to occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Tasmacetus shepherdi Shepherd's Beaked Whale, Tasman Beaked Whale [55]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks	[Resource Information]
Park Name	Zone & IUCN Categories
Eastern Recherche	National Park Zone (IUCN II)
Eastern Recherche	National Park Zone (IUCN II)
Twilight	National Park Zone (IUCN II)
Eastern Recherche	Special Purpose Zone (IUCN VI)
Great Australian Bight	Special Purpose Zone (Mining Exclusion) (IUCN VI)
Twilight	Special Purpose Zone (Mining Exclusion) (IUCN VI)
Twilight	Special Purpose Zone (Mining Exclusion) (IUCN VI)

Extra Information

State and Territory Reserves		[Resource Information]
Protected Area Name	Reserve Type	State
Alexander	Nature Reserve	WA
Cape Arid	National Park	WA
Cape Le Grand	National Park	WA
Eucla	National Park	WA
Far West Coast	Marine Park	SA
Great Australian Bight	Marine National Park	SA
Nullarbor	Wilderness Protection Area	SA
Nuytsland	Nature Reserve	WA
Recherche Archipelago	Nature Reserve	WA
Unnamed WA27087	Nature Reserve	WA

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
BightSPAN 2D Marine Seismic Survey	2009/4750		Completed
SMAP telecommunications submarine cable installation	2024/09989		Completed
Western Green Energy Hub	2024/10049		Assessment
Not controlled action			
Bight Basin Geological Survey	2006/3137	Not Controlled Action	Completed
Expedition 369-Australian Cretaceous Climate and Tectonics, Australian EEZ waters	2017/7891	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
Seismic Survey, Bremer Basin, Mentelle Basin and Zeewyck Sub-	2004/1700	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
basin			
Not controlled action (particular manner)			
Grand Southern Margin 2D Marine Seismic Survey	2008/4599	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
BightSPAN 2D Marine Seismic Survey	2009/4695	Referral Decision	Completed
Eldrad MC3D Seismic Survey, Bight Basin	2014/7128	Referral Decision	Completed
Grand Southern Margin 2D Marine Seismic Survey	2008/4573	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
Albany Canyons group and adjacent shelf break	South-west
Ancient coastline at 90-120m depth	South-west
Commonwealth marine environment surrounding the Recherche Archipelago	South-west

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence
Seabirds		
Ardenna carneipes Flesh-footed Shearwater [82404]	Foraging	Known to occur
Ardenna pacifica Wedge-tailed Shearwater [84292]	Reproduction	Known to occur
Ardenna tenuirostris Short-tailed Shearwater [82652]	Foraging	Known to occur
Eudyptula minor Little Penguin [1085]	Foraging	Likely to occur

Scientific Name	Behaviour	Presence
Hydroprogne caspia Caspian Tern [808]	Foraging	Known to occur
Larus pacificus Pacific Gull [811]	Foraging	Known to occur
Onychoprion anaethetus Bridled Tern [82845]	Foraging	Likely to occur
Pelagodroma marina White-faced Storm-petrel [1016]	Foraging	Known to occur
Phalacrocorax fuscescens Black-faced Cormorant [59660]	Foraging	Likely to occur
Pterodroma macroptera macroptera Great-winged Petrel (macroptera race) [1035]	Foraging	Known to occur
Puffinus assimilis Little Shearwater [59363]	Foraging	Likely to occur
Sternula nereis Fairy Tern [82949]	Foraging	Known to occur
Seals		
Neophoca cinerea Australian Sea Lion [22]	Foraging	Likely to occur
Sharks		
Carcharodon carcharias White Shark [64470]	Foraging	Known to occur
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging	Likely to be present
Eubalaena australis Southern Right Whale [40]	Migration	
Eubalaena australis Southern Right Whale [40]	Reproduction	
Physeter macrocephalus Sperm Whale [59]	Foraging	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 is 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 on the contents of this report.

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 point locations and environmental data layers.

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 when time permits.

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 breeding sites; and
- 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

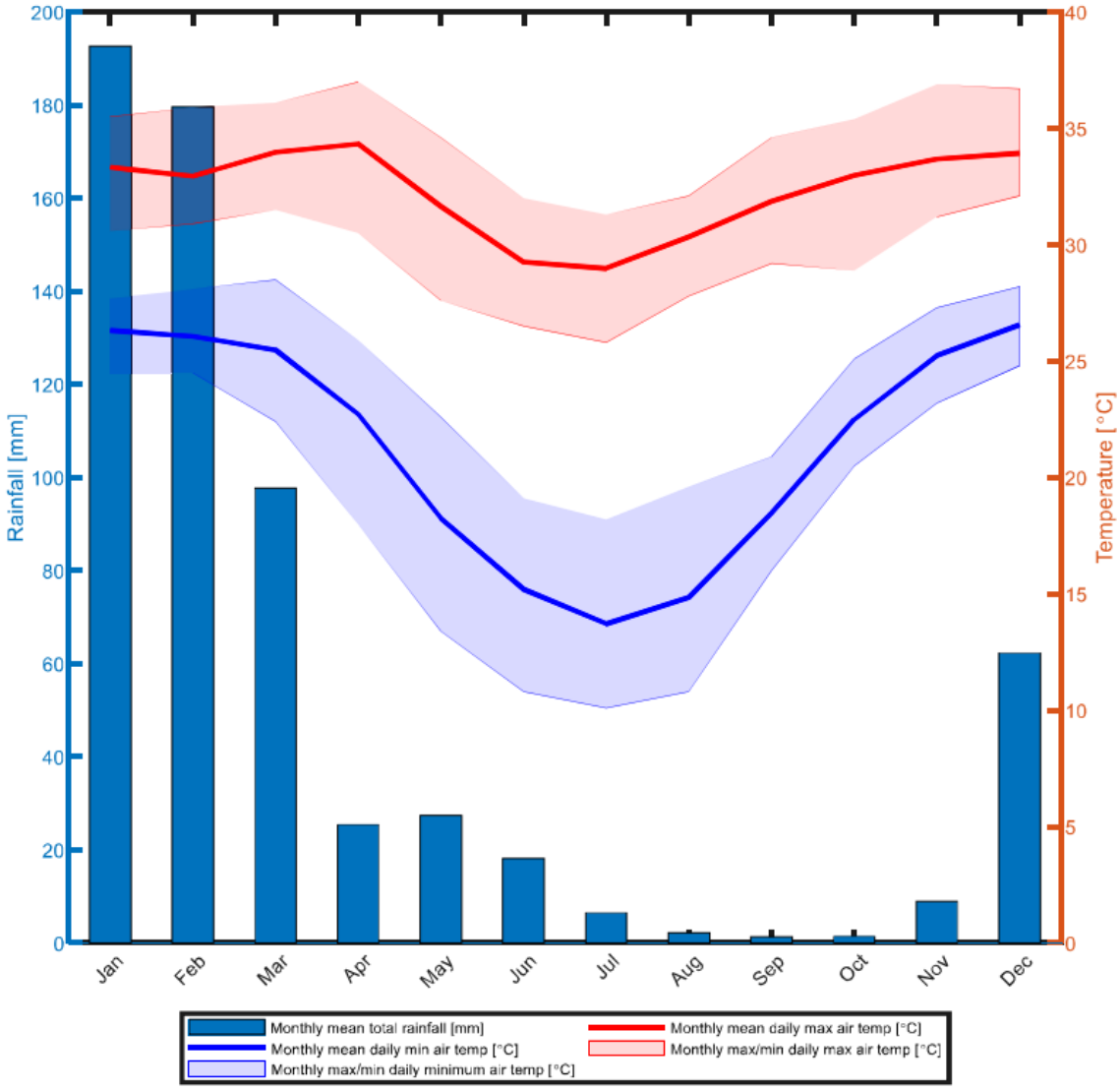
The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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APPENDIX B SUPPORTING FIGURES FOR SECTION 2.3 METEOROLOGY AND OCEANOGRAPHY

Browse



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 1: Monthly average total rainfall (mm) and air temperature (°C), calculated based on observations at the Broome Airport weather station from 1939-2020 (Bureau of Meteorology, 2020)

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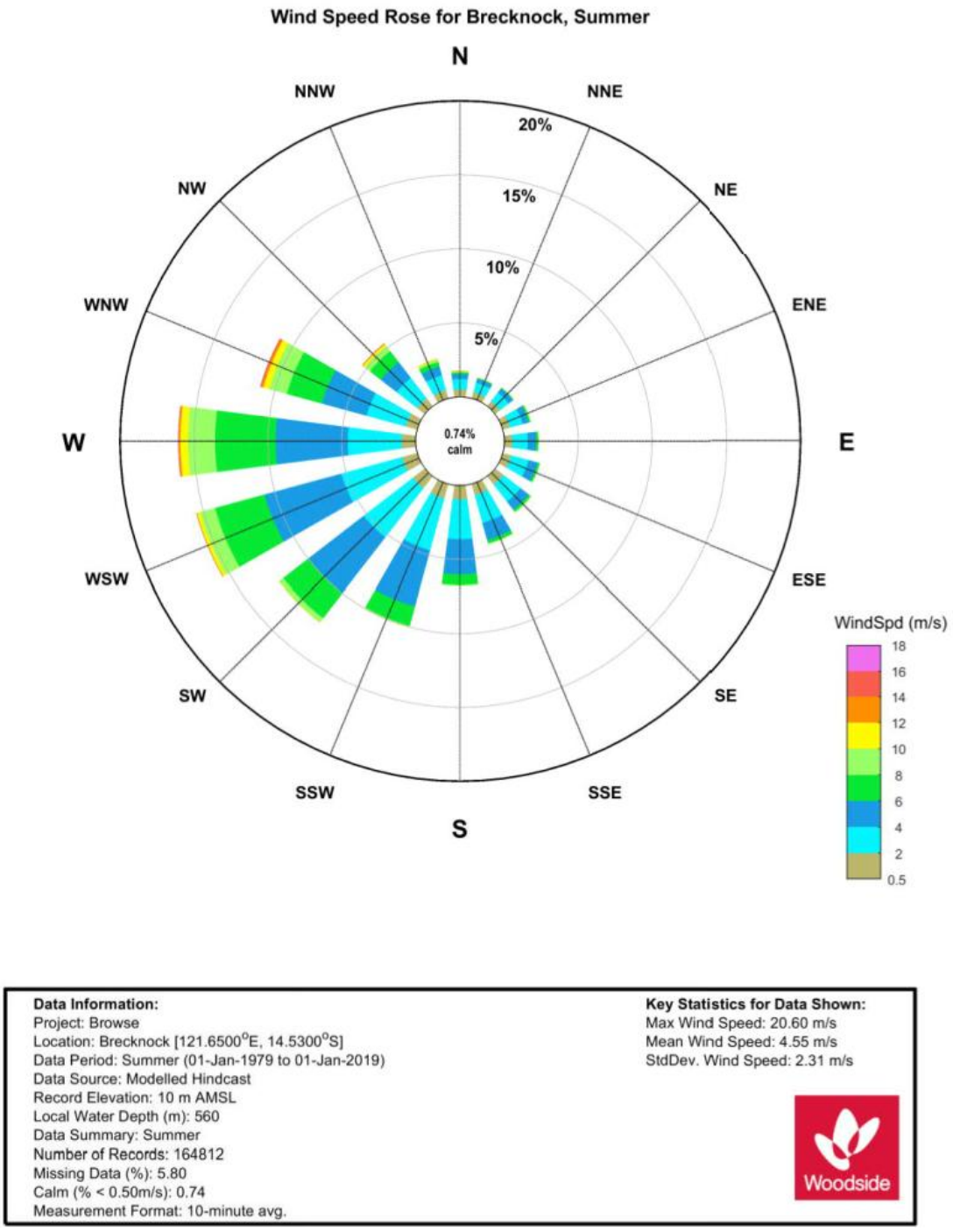


Figure 2: Summer distributions of 10-minute average wind speeds by 22.5° directional sectors at the Brecknock site (Metocean Solutions Ltd, 2019)

Note, tropical cyclone events were not included in this distribution. Winds at Brecknock in summer are predominantly from the west-northwest to southwest due to the North West Monsoon (Woodside, 2019).

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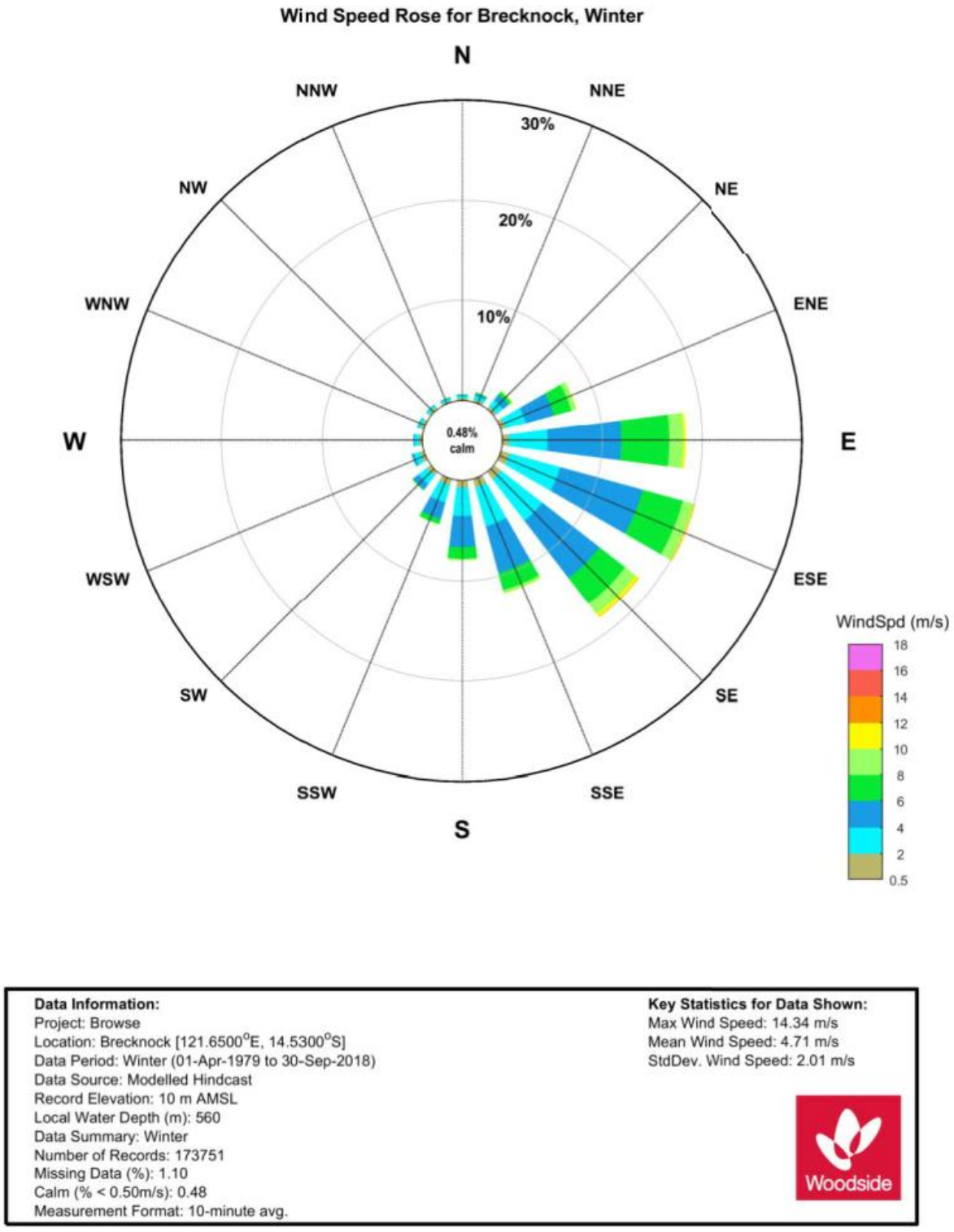


Figure 3: Winter distributions of 10-minute average wind speeds by 22.5° directional sectors at the Brecknock site (Metocean Solutions Ltd 2019)

Note, tropical cyclone events were not included in this distribution. Winds at Brecknock in winter are predominantly from the east to southeast due to the South East Trade Winds coming from the Australian mainland (Woodside, 2019).

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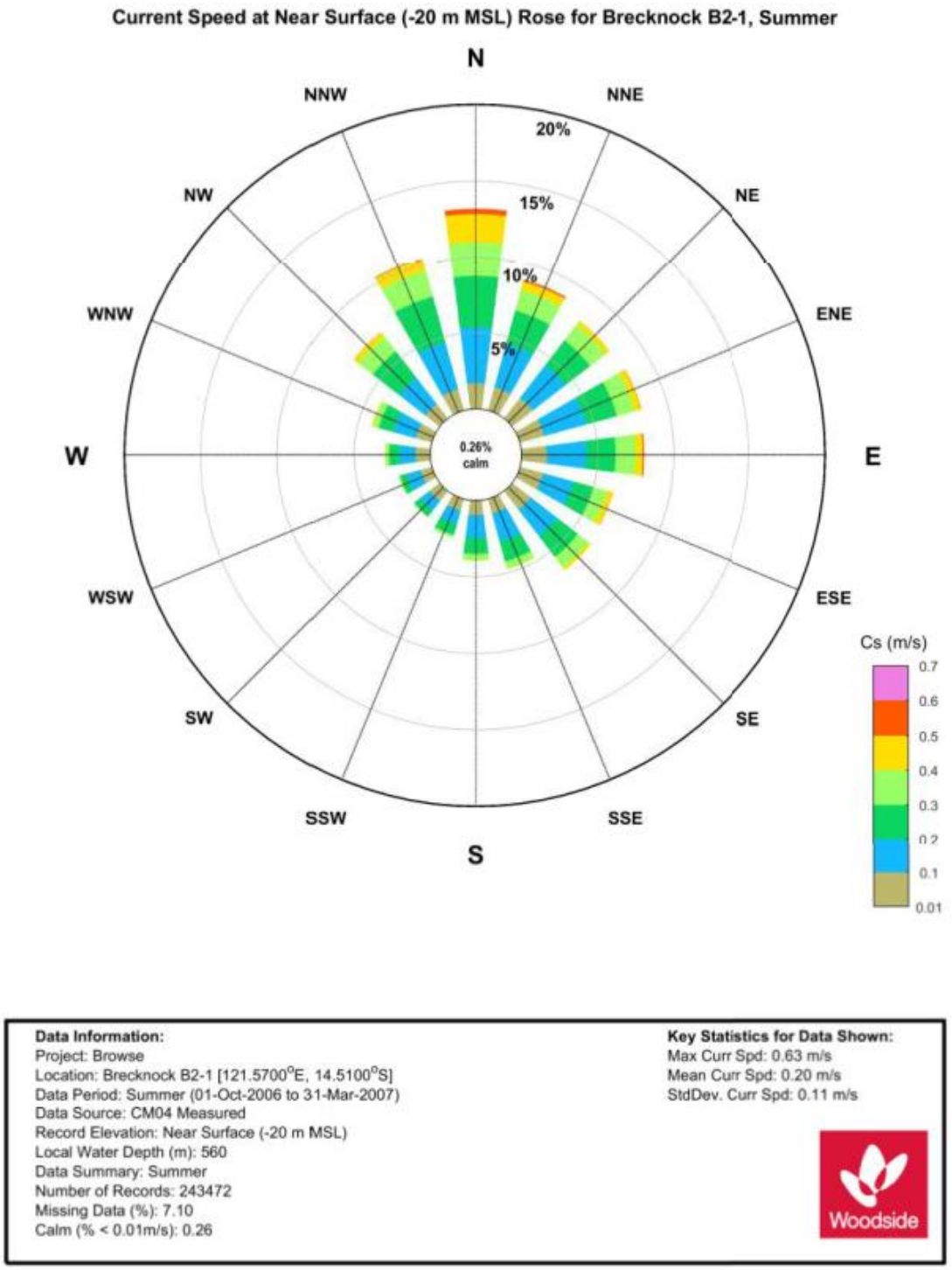


Figure 4: Summer (Nov to Apr) near-surface combined frequency of one-minute mean current speed and direction (towards) measured at Brecknock B2-1 location (cyclones removed) (RPS Metocean Ltd, 2008)

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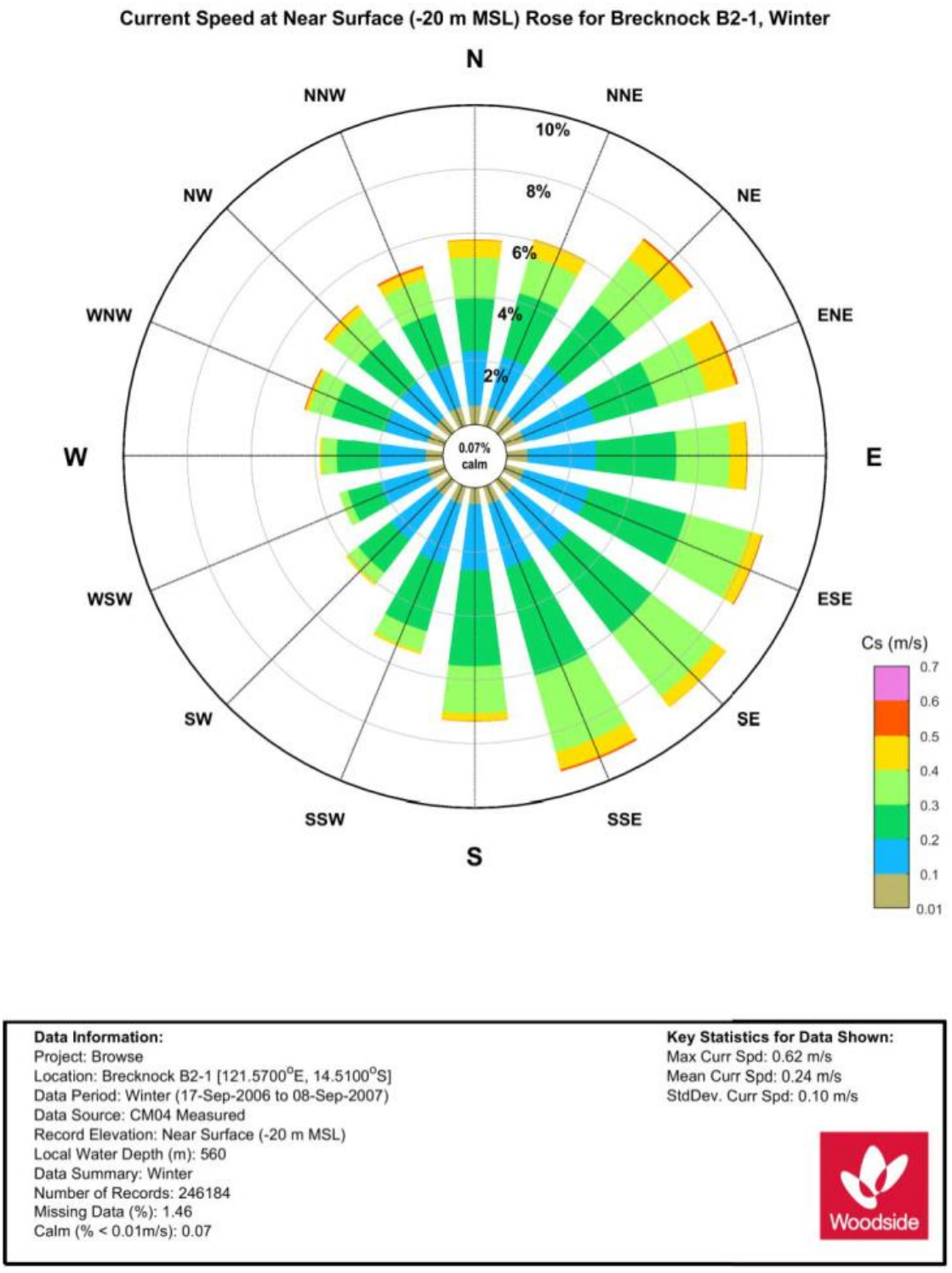


Figure 5: Winter (May to Sep) near-surface combined frequency of one-minute mean current speed and direction (towards) measured at Brecknock B2-1 location (cyclones removed) (RPS Metocean Ltd, 2008)

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North West Shelf/Scarborough

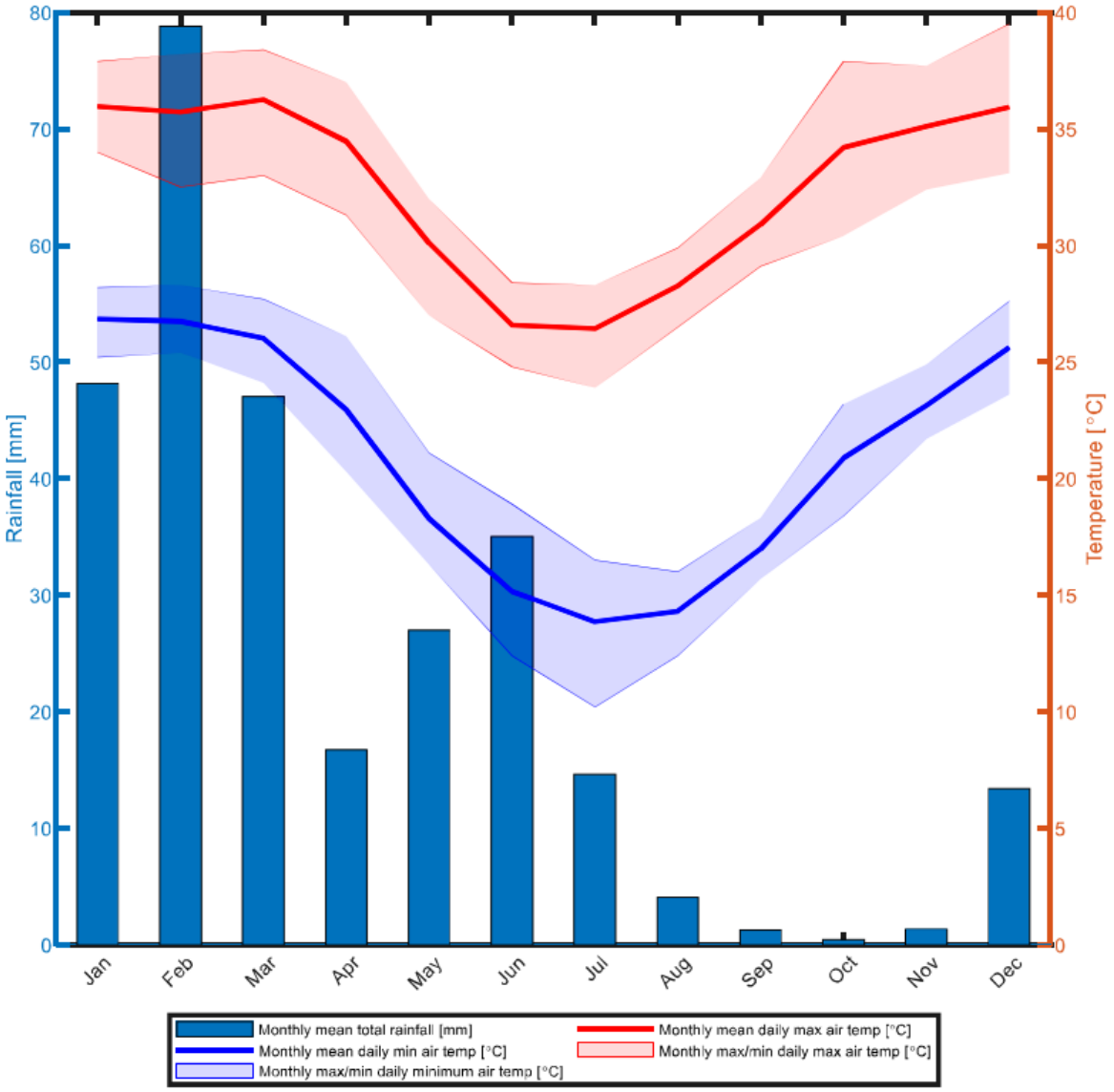


Figure 1: Monthly average total rainfall (mm) and air temperature (°C), calculated based on observations at the Karratha Aero weather station from 1972 to 2020 and 1993 to 2020, respectively (Bureau of Meteorology, 2020)

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.

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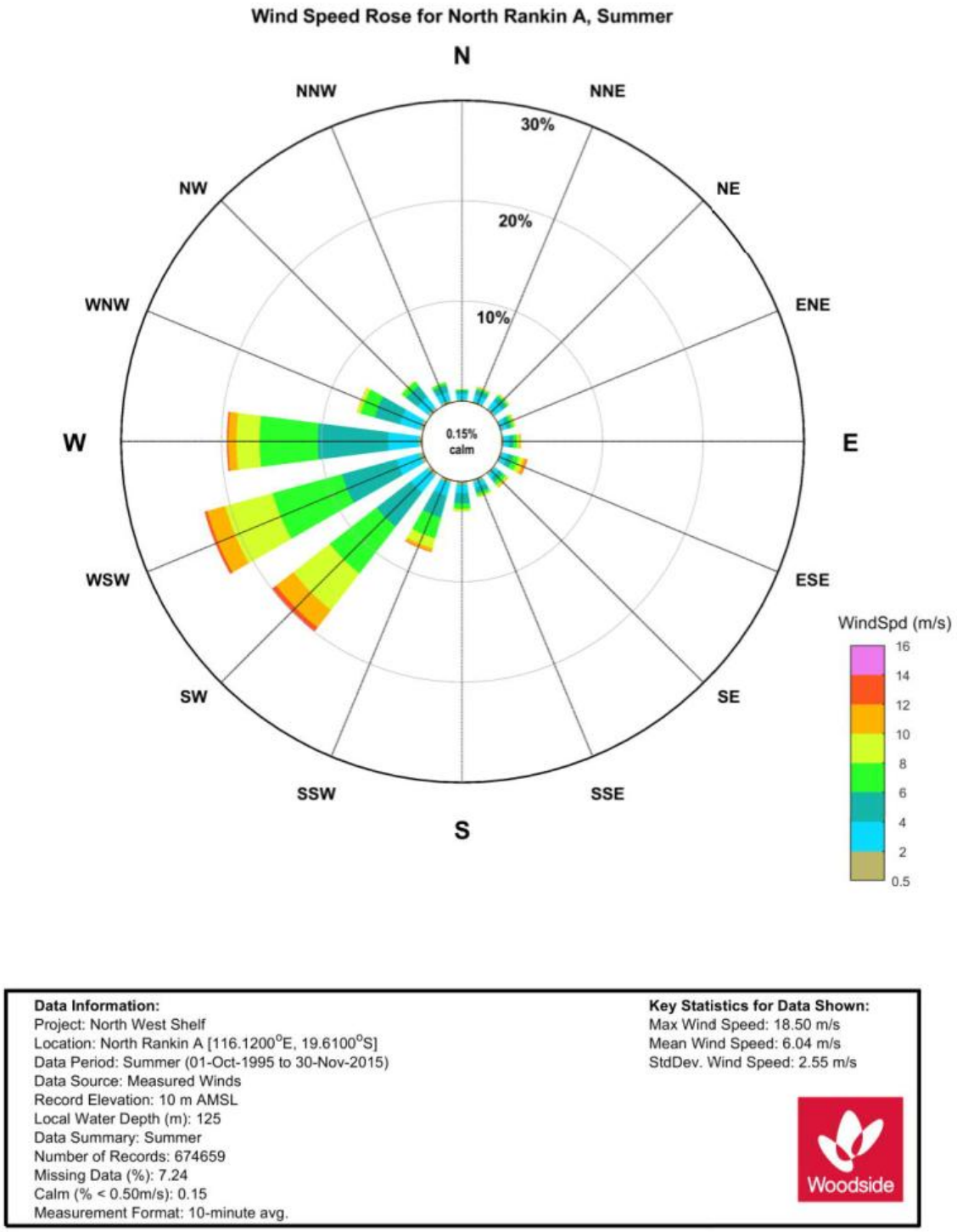
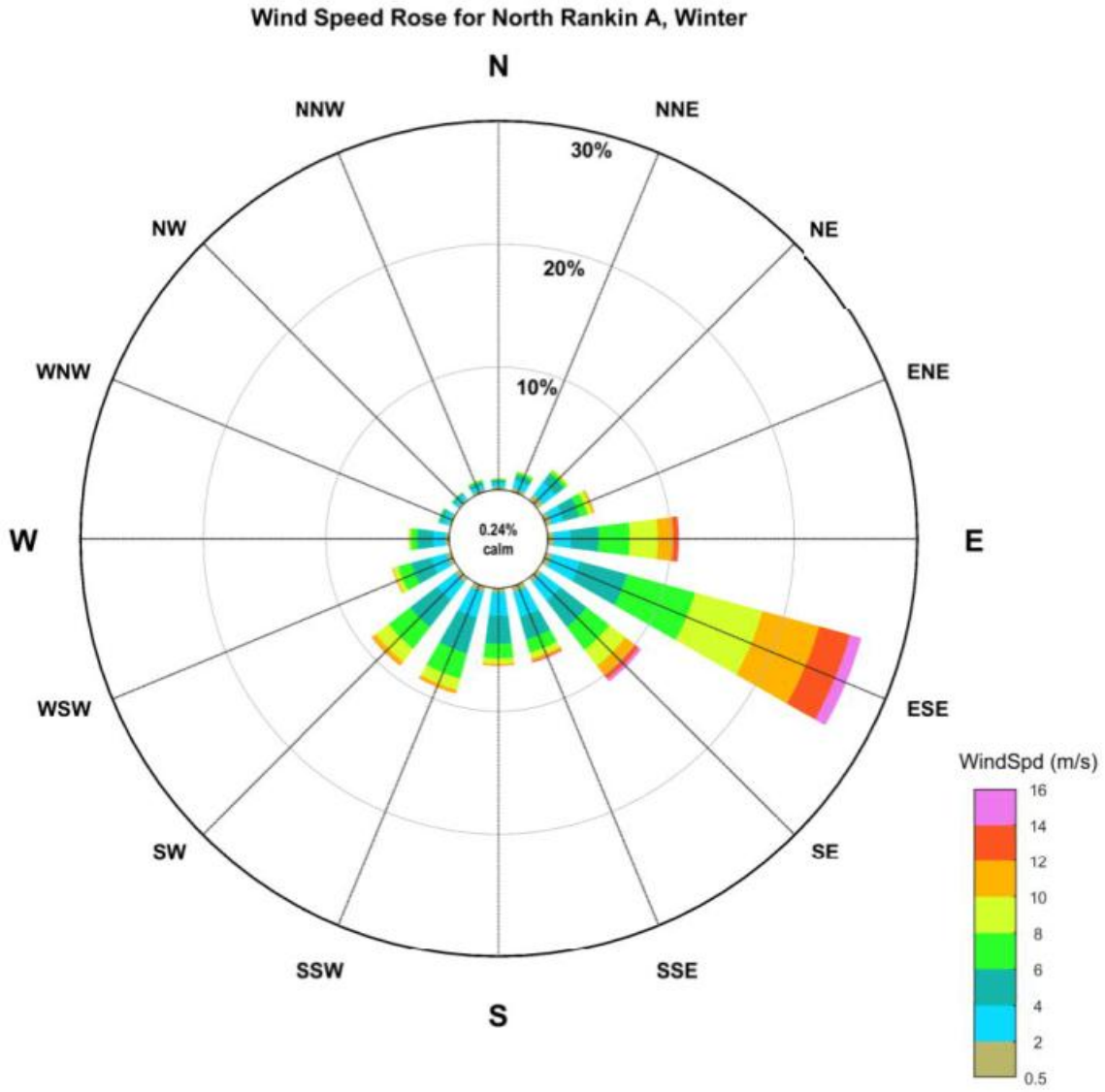


Figure 2: Summer distributions of 10-minute average wind speeds by 22.5° directional sectors at the North Rankin A site (Woodside, 2015)

Note tropical cyclone events were not included in this distribution. Winds at North Rankin A in summer are characterised by west to southwest driven by the North West Monsoon (RPS, 2016).

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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

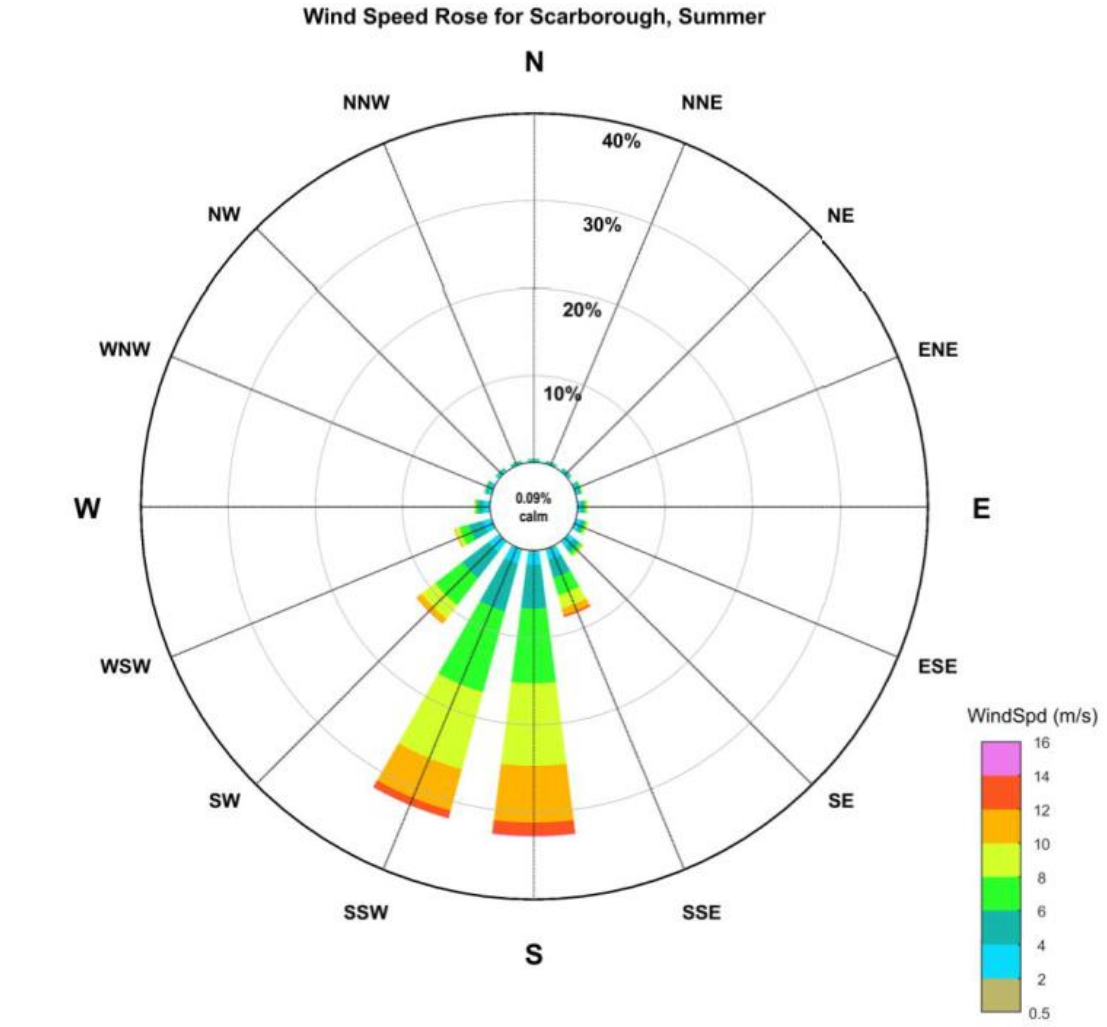
Woodside

Figure 3: 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).

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Scarborough



Data Information:
Project: North West Shelf
Location: Scarborough [113.2000°E, 19.8800°S]
Data Period: Summer (01-Jan-1979 to 01-Jan-2011)
Data Source: CSFR
Record Elevation: 10 m AMSL
Local Water Depth (m): 950
Data Summary: Summer
Number of Records: 129521
Missing Data (%): 7.46
Calm (% < 0.50m/s): 0.09
Measurement Format: 10-minute avg.

Key Statistics for Data Shown:
Max Wind Speed: 16.75 m/s
Mean Wind Speed: 7.23 m/s
StdDev. Wind Speed: 2.64 m/s

Woodside

Figure 1: 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.

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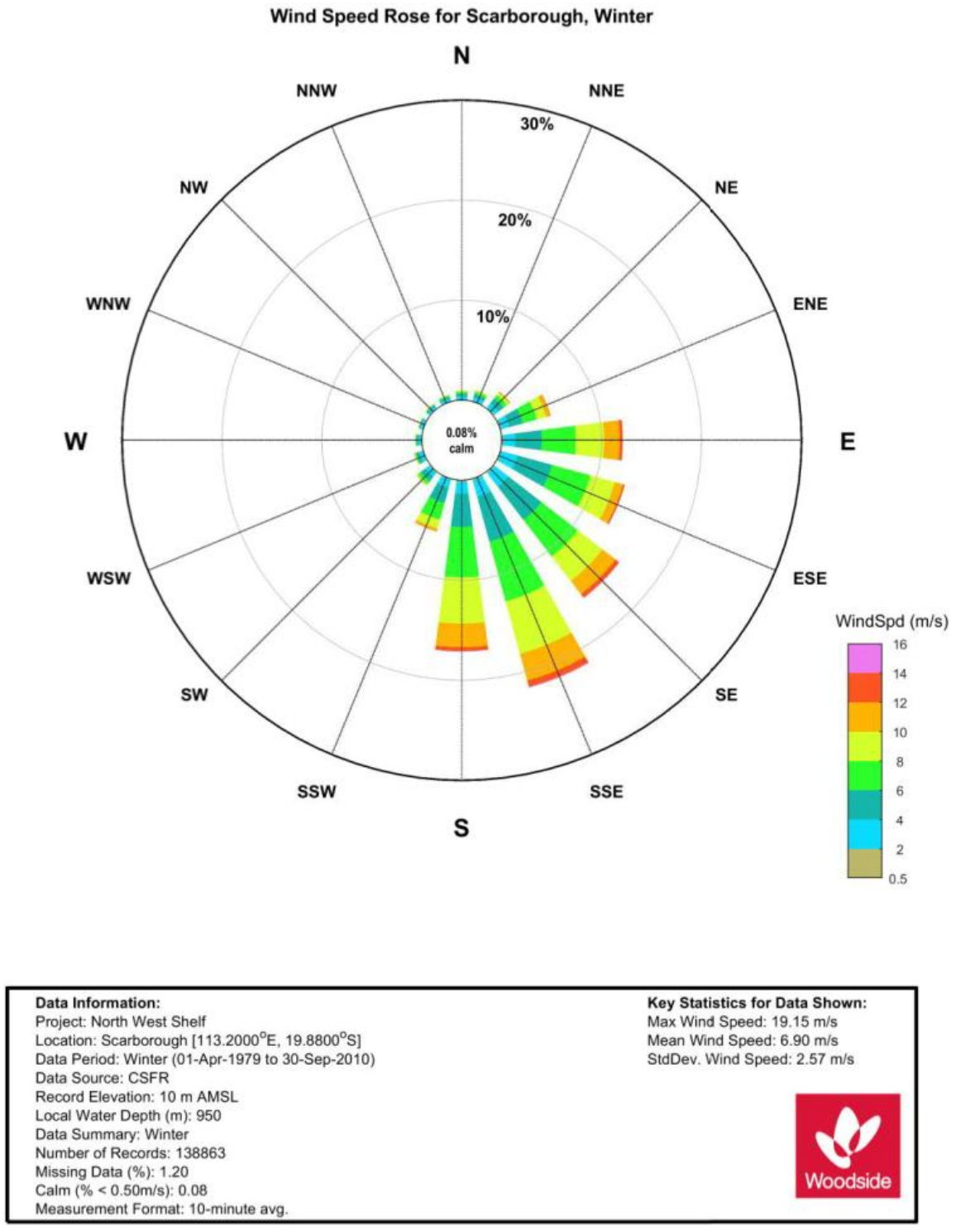


Figure 2: Winter distributions of wind speeds (10-minute at 10 m above sea level) by 22.5° directional sectors at the Scarborough site (Woodside, 2018)

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).

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North West Shelf

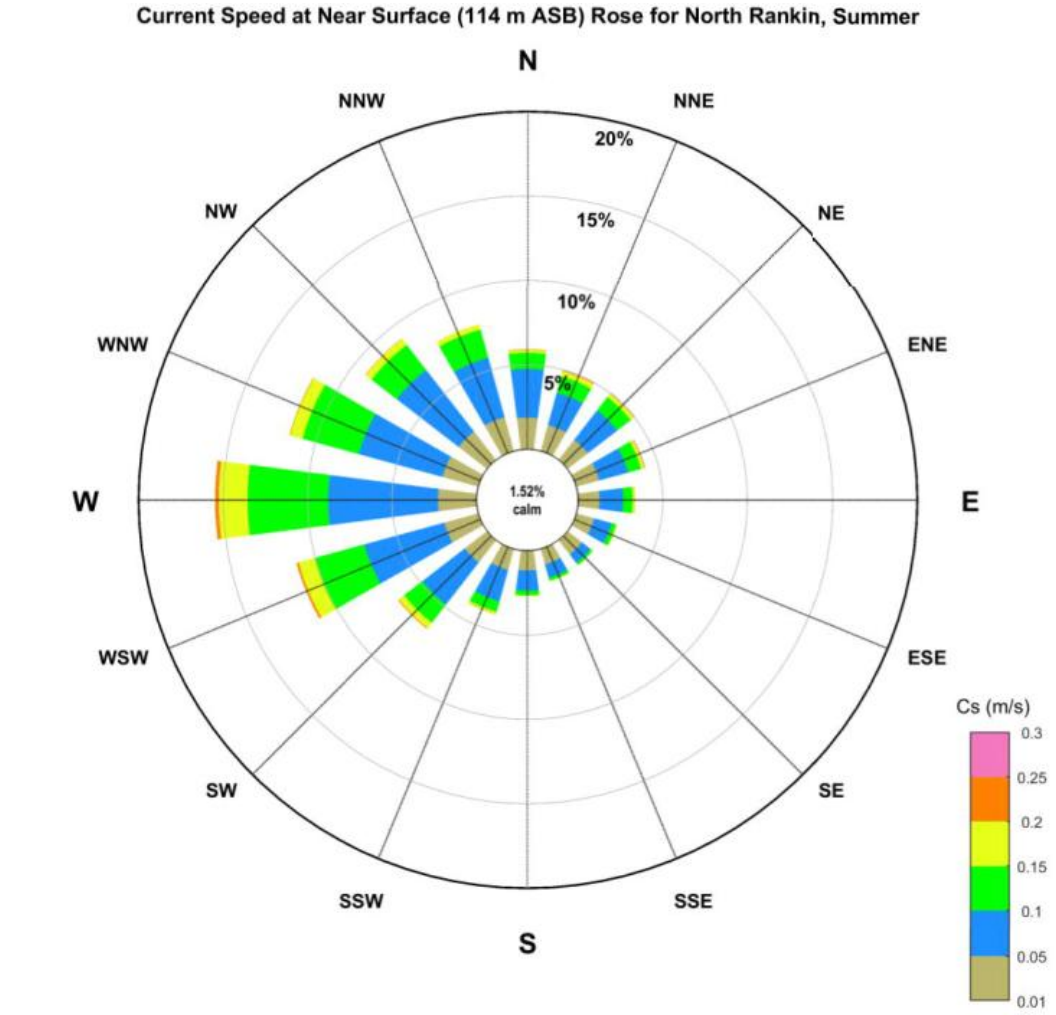


Figure 1: Summer (Nov to Apr) near surface combined frequency of one-minute mean current speed and direction (towards) measured at the North Rankin location (cyclones removed) (Woodside, 2011)

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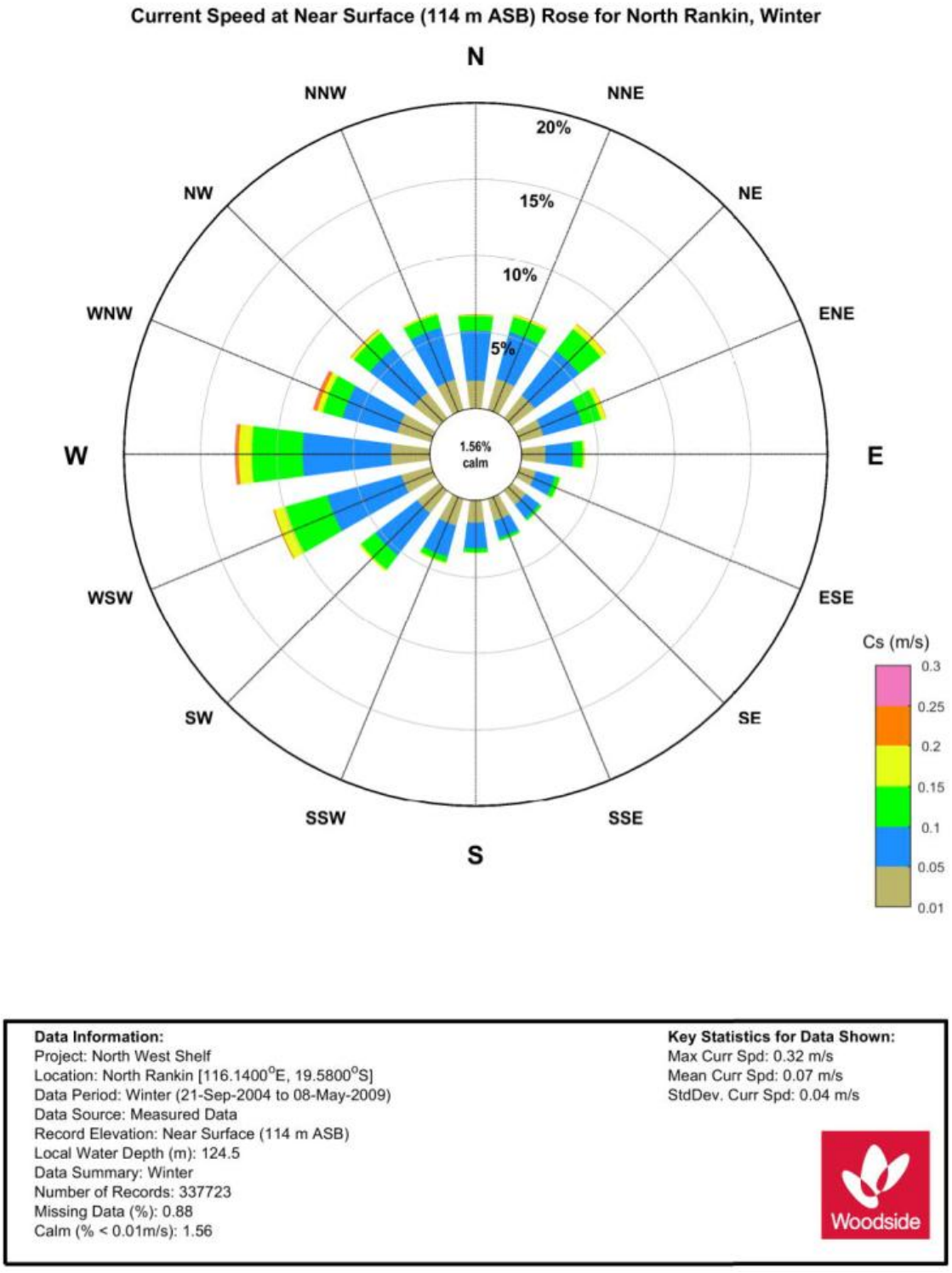


Figure 2: Winter (May to Sep) near surface combined frequency of one-minute mean current speed and direction (towards) measured at the North Rankin location (cyclones removed) (Woodside, 2011)

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Scarborough

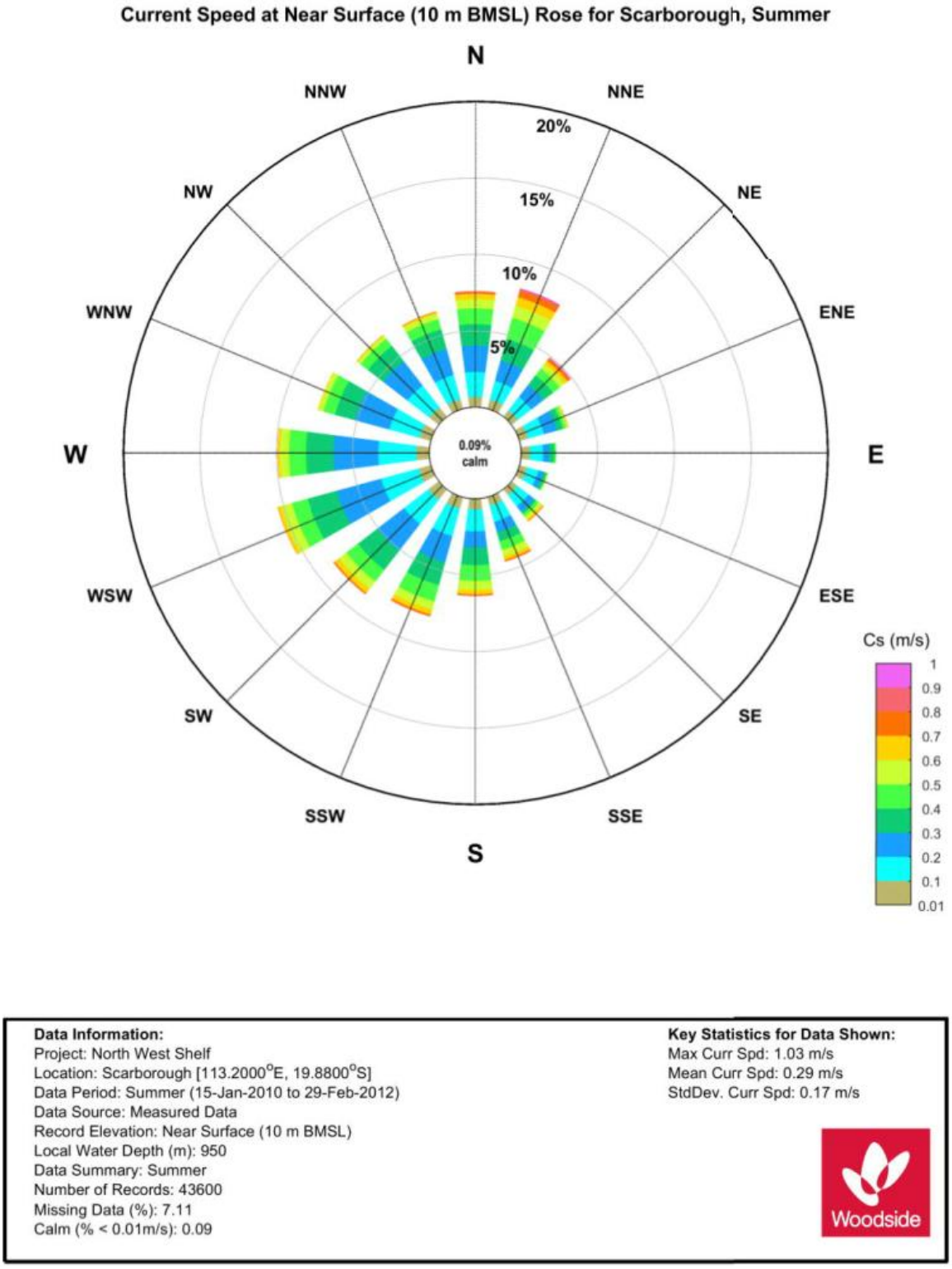


Figure 1: Summer (Nov to Apr) near-surface combined frequency of one-minute mean current speed and direction (towards) measured at the Scarborough location (cyclones removed) (Woodside, 2018)

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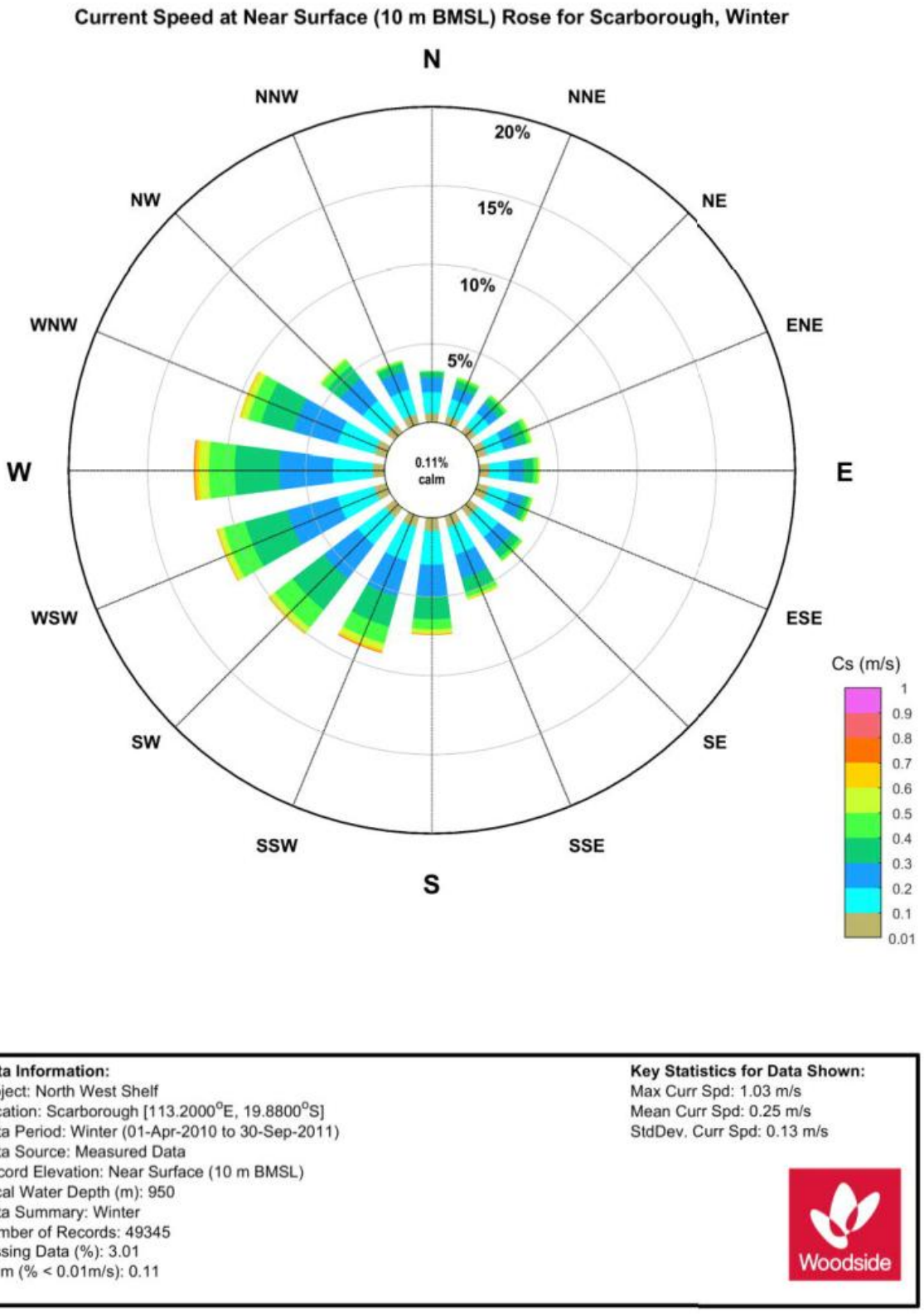


Figure 2: Winter (May to Sep) near-surface combined frequency of one-minute mean current speed and direction (towards) measured at the Scarborough location (cyclones removed) (Woodside, 2018)

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North West Cape

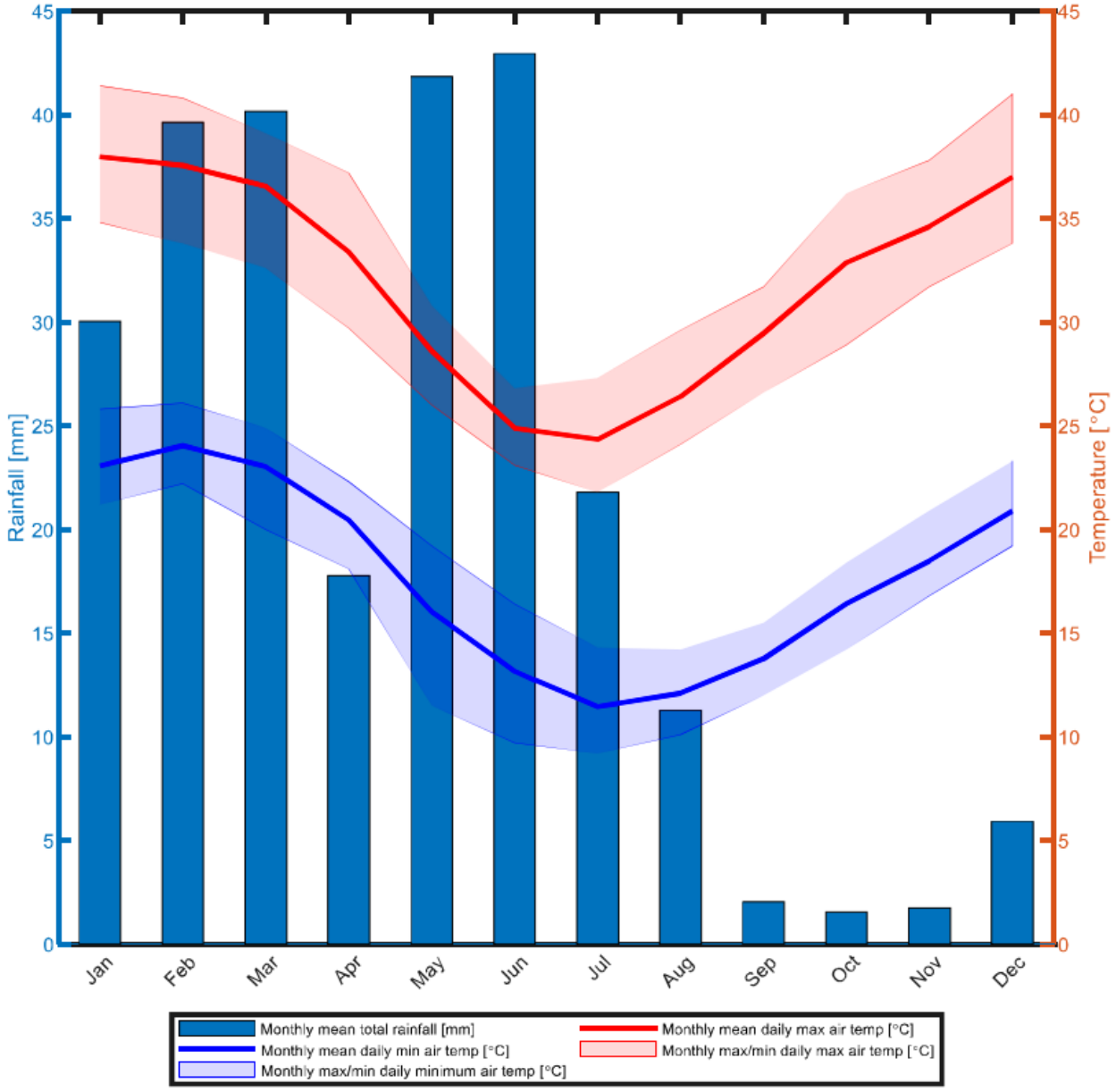
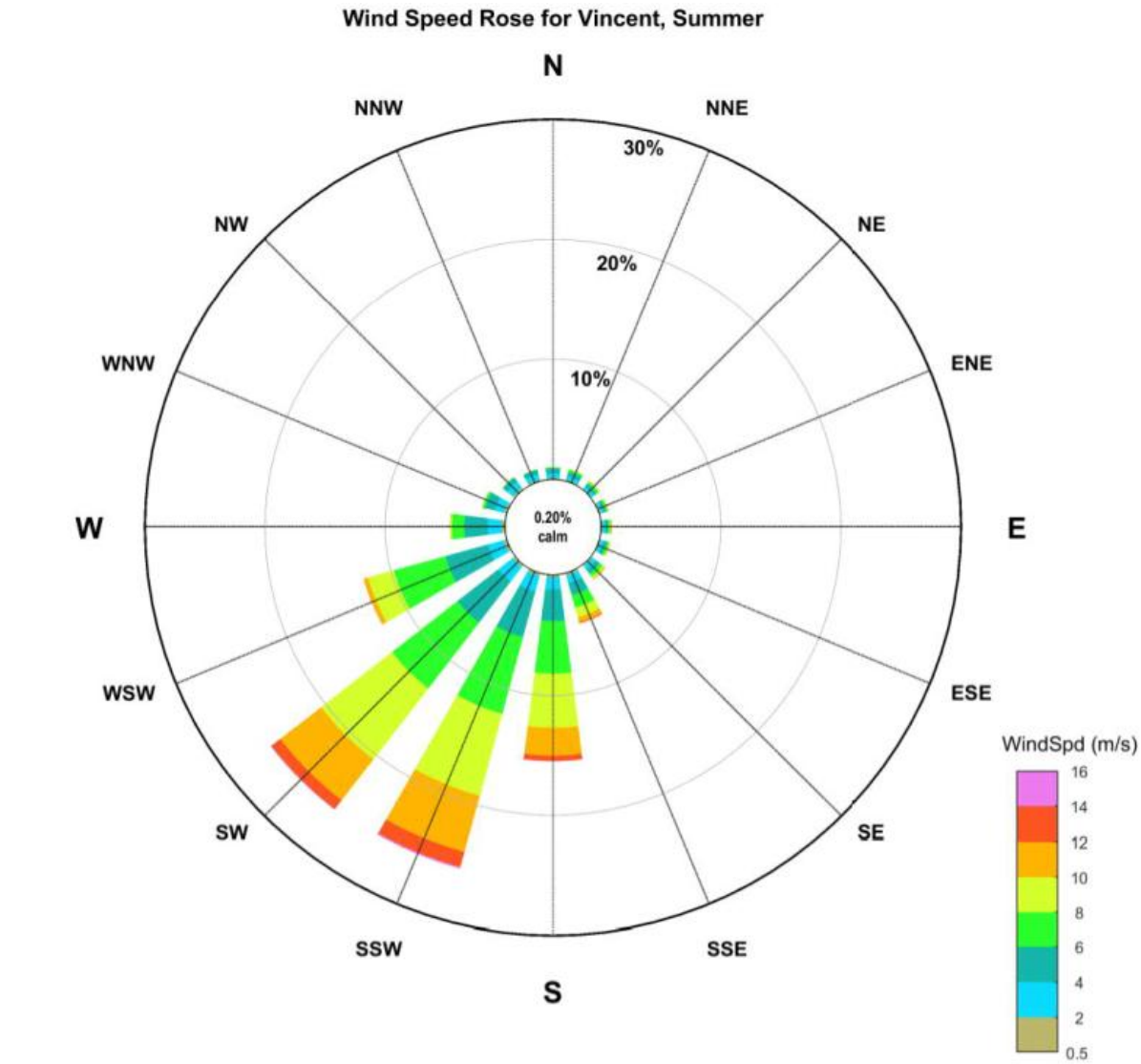


Figure 1: Monthly average total rainfall (mm) and air temperature (°C), calculated based on observations at the Learmonth Airport weather station from 1945 to 2020 and 1975 to 2020, respectively (Bureau of Meteorology, 2020)

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.

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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

Woodside

Figure 2: 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)

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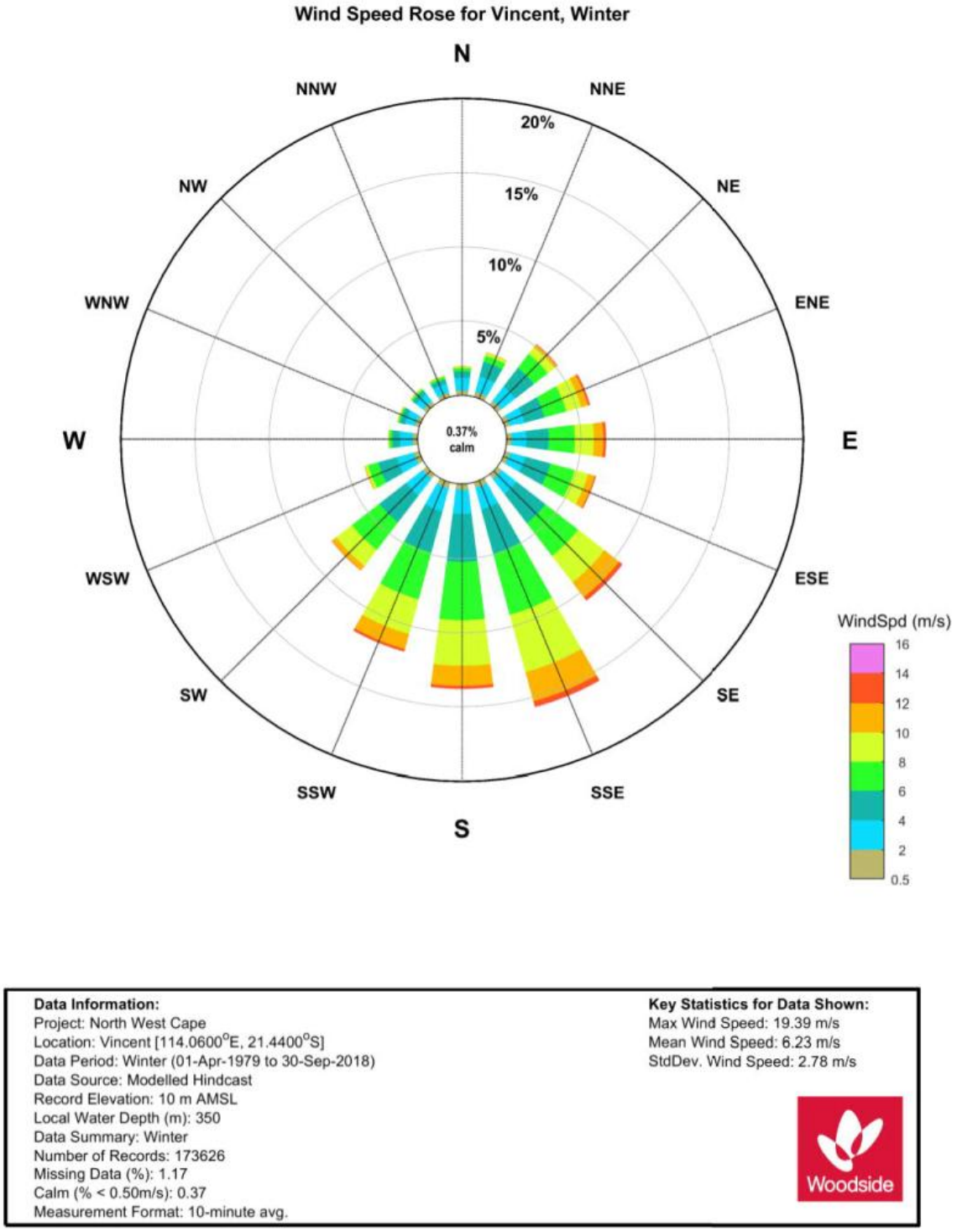


Figure 3: Winter distributions of wind speeds (10-minute at 10 m above sea level) 22.5° directional sectors at the Vincent site (Vincent Metocean)

Note, tropical cyclone events were not included in this distribution. In winter, winds at are predominantly from the south to southeast, associated with the South East Trades. Easterly gales are experienced at the Vincent location due to high pressure systems generating from the Great Australian Bight area to the site (MetOcean Engineers, 2005).

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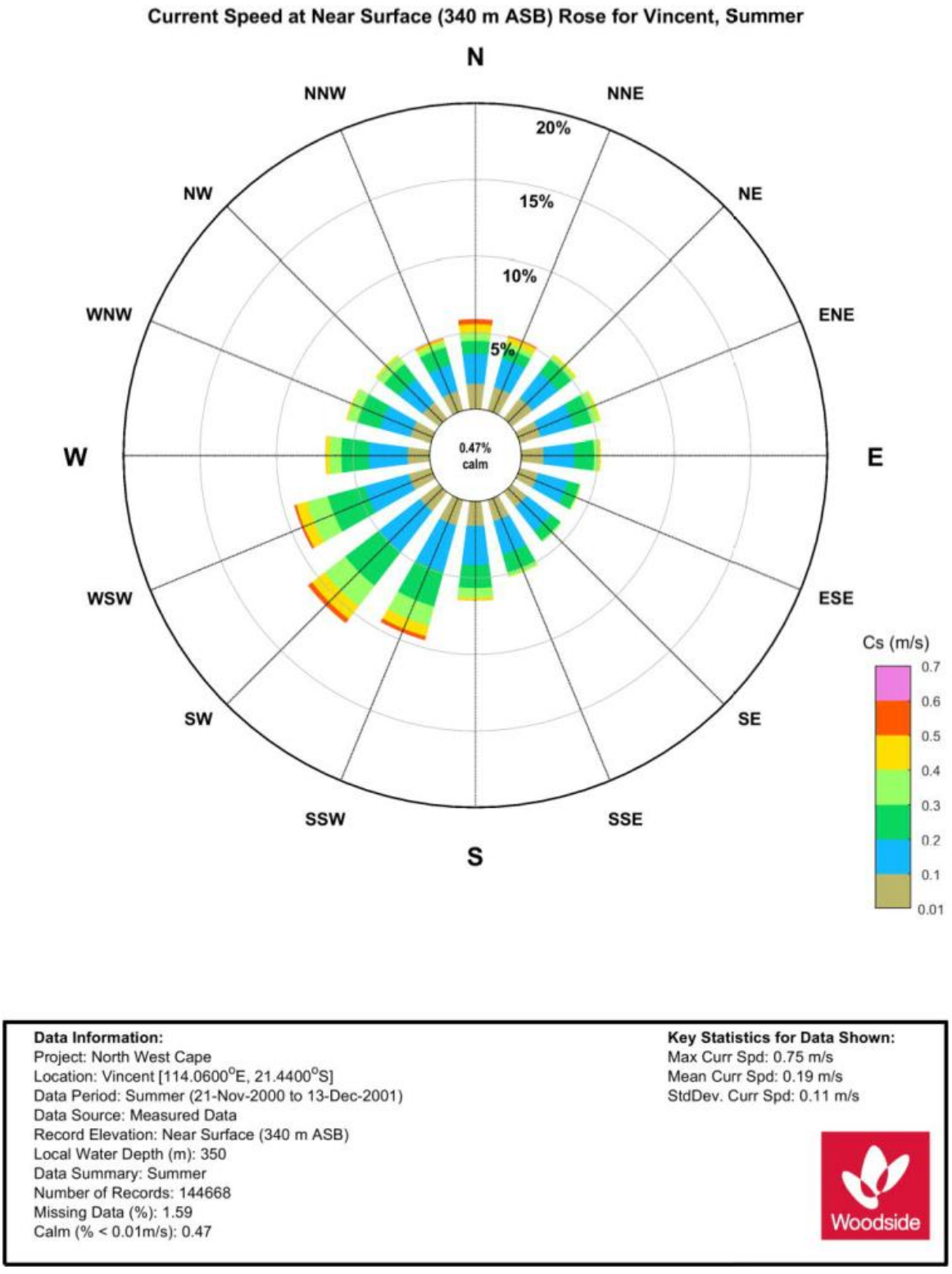


Figure 4: Summer (May to Sep) near-surface combined frequency of one-minute mean current speed and direction (towards) measured at the Vincent location (cyclones removed) (Woodside, 2016)

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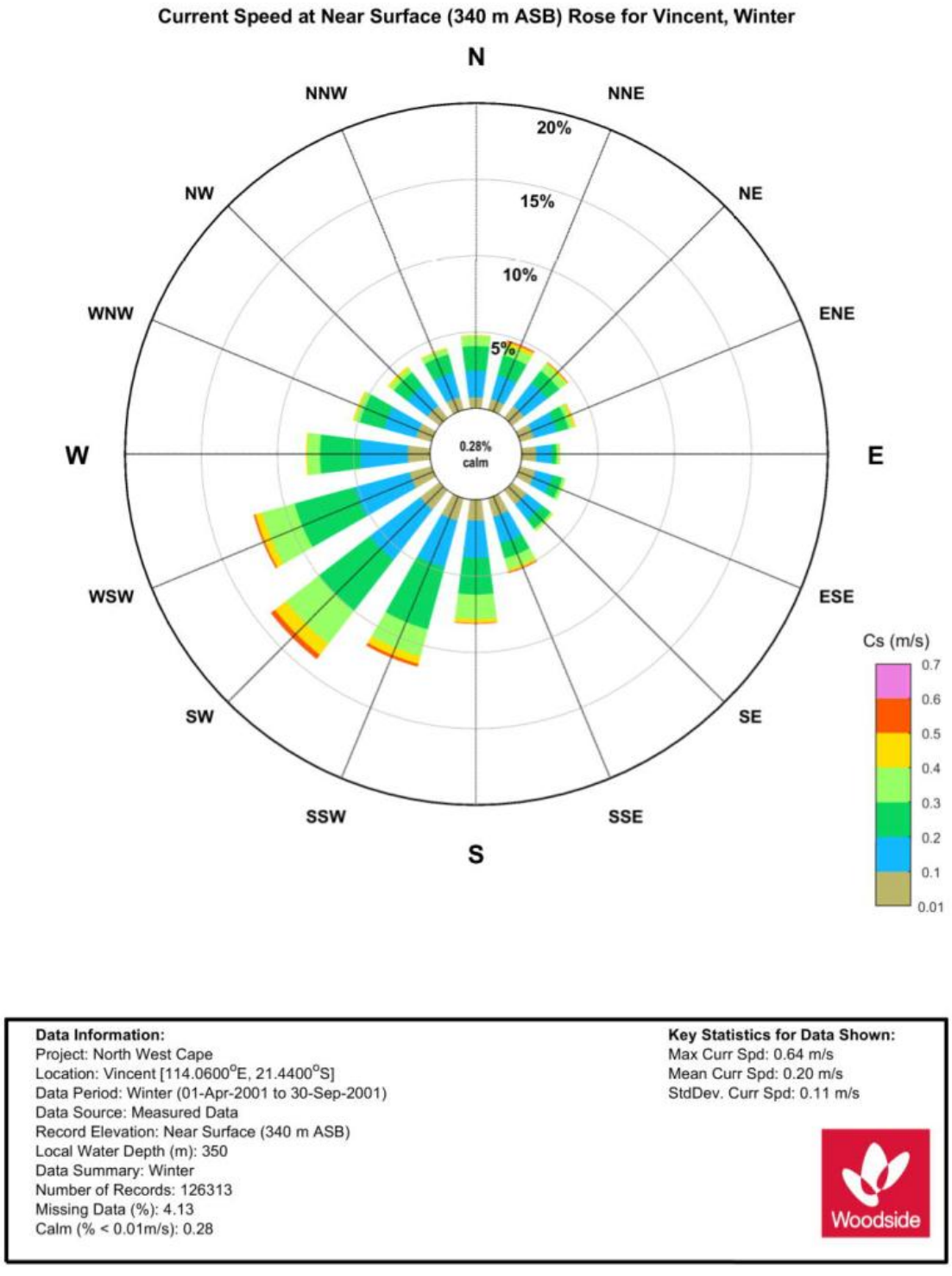


Figure 5: Winter (Nov to Apr) near-surface combined frequency of one-minute mean current speed and direction (towards) measured at the Vincent location (cyclones removed) (Woodside, 2016)

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APPENDIX C SUMMARY OF SEABIRD PRESENCE UPDATES FOR 2026 REVIEW

Table 1 presents a list of the low occurrence threatened and migratory seabird and shorebird species as identified in the PMST that occur within the NWMR.

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Table 1: Low occurrence seabird and migratory shorebird species (threatened/migratory) identified by the EPBC Act PMST report as potentially occurring within the NWMR

Common name	Scientific name	EPBC Act (Commonwealth) (as per PMST report in Appendix A	2024 occurrence value	2026 occurrence value	Description of change
Abbott's booby	*Papasula abbotti*	Endangered	Low	Low	No observed changes between 2024 and 2026
Black-browed albatross	*Thalassarche melanophris*	Vulnerable Migratory	Low	Low	No observed changes between 2024 and 2026
Campbell albatross, Campbell black-browed albatross	*Thalassarche impavida*	Vulnerable Migratory	Low	Low	No observed changes between 2024 and 2026
Indian yellow-nosed albatross	*Thalassarche carteri*	Vulnerable Migratory	Low	Low	No observed changes between 2024 and 2026
Night parrot	*Pezoporus occidentalis*	Critically Endangered	Low	Low	No observed changes between 2024 and 2026
Northern giant petrel	*Macronectes halli*	Vulnerable Migratory	Low	Low	No observed changes between 2024 and 2026
Nunivak bar-tailed godwit, western Alaskan bar-tailed godwit	*Limosa lapponica baueri*	Endangered	Low	Low	No observed changes between 2024 and 2026
Princess parrot, Alexandra's parrot	*Polytelis alexandrae*	Vulnerable	Low	Low	No observed changes between 2024 and 2026
Red-rumped swallow	*Cecropis daurica*	Migratory	Low	Low	No observed changes between 2024 and 2026
Shy albatross	*Thalassarche cauta*	Endangered Migratory	Low	Low	No observed changes between 2024 and 2026
Southern giant-petrel, southern giant petrel	*Macronectes giganteus*	Endangered Migratory	Low	Low	No observed changes between 2024 and 2026
Wandering albatross	*Diomedea exulans*	Vulnerable Migratory	Low	Low	No observed changes between 2024 and 2026
White-capped albatross	*Thalassarche steadi*	Vulnerable Migratory	Low	Low	No observed changes between 2024 and 2026

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REFERENCES

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APPENDIX D EPBC ACT PROTECTED MATTERS SEARCH TOOL RESULTS

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Operational Area

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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: 04-Dec-2025

Operational Area A Torosa

Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	3
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	25
Listed Migratory Species:	40

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	1
Listed Marine Species:	71
Whales and Other Cetaceans:	25
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	1

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	1
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	33
Key Ecological Features (Marine):	2
Biologically Important Areas:	8
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Commonwealth Marine Area [Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Anous tenuirostris melanops		
Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris canutus		
Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Papasula abbotti		
Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area
Phaethon lepturus fulvus		
Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Phaethon rubricauda westralis		
Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird [91824]	Endangered	Species or species habitat known to occur within area
Sternula albifrons		
Little Tern [82849]	Vulnerable	Congregation or aggregation 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
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely 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 foliosquama		
Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat may occur within area
Aipysurus fuscus		
Dusky Sea Snake [1119]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
SHARK		
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Glyphis garricki Northern River Shark, New Guinea River Shark [82454]	Endangered	Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
null		
Balaenoptera omurai		
Omura's Whale [87136]		Species or species habitat likely to occur within area
Migratory Marine Birds		
Anous stolidus		
Common Noddy [825]		Species or species habitat likely to occur within area
Calonectris leucomelas		
Streaked Shearwater [1077]		Species or species habitat known to occur within area
Fregata ariel		
Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
Fregata minor		
Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
Phaethon lepturus		
White-tailed Tropicbird [1014]		Species or species habitat known to occur within area
Phaethon rubricauda		
Red-tailed Tropicbird [994]		Species or species habitat known to occur within area
Sternula albifrons		
Little Tern [82849]	Vulnerable	Congregation or aggregation known to occur within area
Migratory Marine Species		
Anoxypristis cuspidata		
Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat may occur within area
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
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 likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely 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

Scientific Name	Threatened Category	Presence Text
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely 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	Foraging, feeding or related behaviour likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat may occur within area
Migratory Terrestrial Species		
Cecropis daurica Red-rumped Swallow [80610]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hirundo rustica Barn Swallow [662]		Species or species habitat known to occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Commonwealth Heritage Places		[Resource Information]
Name	State	Status
Natural		
Scott Reef and Surrounds - Commonwealth Area	EXT	Listed place

Listed Marine Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Bird		
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	Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Cecropis daurica as Hirundo daurica Red-rumped Swallow [80610]		Species or species habitat may occur within area overfly marine area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
Hirundo rustica Barn Swallow [662]		Species or species habitat known to occur within area overfly marine area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Papasula abbotti Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat known to occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat known to occur within area
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Congregation or aggregation known to occur within area
Fish		

Scientific Name	Threatened Category	Presence Text
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 intestinalis Australian Messmate Pipefish, Banded Pipefish [66202]		Species or species habitat may occur within area
Corythoichthys schultzi Schultz's Pipefish [66205]		Species or species habitat may occur within area
Cosmocampus banneri Roughridge Pipefish [66206]		Species or species habitat may occur within area
Doryrhamphus dactyliophorus Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		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 spinirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophorus Ribboned Pipehorse, Ribboned Seadragon [66226]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Trachyrhamphus longirostris Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Reptile		
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 foliosquama Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Aipysurus fuscus Dusky Sea Snake [1119]	Endangered	Species or species habitat known to occur within area
Aipysurus laevis Olive Sea Snake, Olive-brown Sea Snake [1120]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Emydocephalus annulatus Eastern Turtle-headed Sea Snake [1125]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Hydrophis coggeri Cogger's Sea Snake, Black-headed Sea Snake [25925]		Species or species habitat may occur within area
Hydrophis elegans Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area
Hydrophis hardwickii as Lapemis hardwickii Spine-bellied Sea Snake [93516]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hydrophis kingii as Disteira kingii		
Spectacled Sea Snake [93511]		Species or species habitat may occur within area
Hydrophis major as Disteira major		
Olive-headed Sea Snake [93512]		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 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
Lepidochelys olivacea		
Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Whales and Other Cetaceans		[Resource Information]
Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	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

Current Scientific Name	Status	Type of Presence
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera omurai Omura's Whale [87136]		Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
Lagenodelphis hosei Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area

Current Scientific Name	Status	Type of Presence
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat may occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Ziphius cavirostris 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
Oct - Mar		
Chelonia mydas Green Turtle [1765]	Nesting	Known to occur

Extra Information

State and Territory Reserves		[Resource Information]
Protected Area Name	Reserve Type	State
Scott Reef	Nature Reserve	WA

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
2 geotechnical surveys - preliminary and final	2006/2886		Completed
Browse Carbon Capture and Storage Project	2024/10028		Referral Decision
Browse to North West Shelf Development, Indian Ocean, WA	2018/8319		Approval
Deep Water Northwest Shelf 2D Seismic Survey	2007/3260		Completed
Controlled action			
2-D seismic survey Scott Reef	2000/125	Controlled Action	Post-Approval
Browse FLNG Development, Commonwealth Waters	2013/7079	Controlled Action	Post-Approval
Conduct an exploration drilling campaign	2010/5718	Controlled Action	Completed
Development of Browse Basin Gas Fields (Upstream)	2008/4111	Controlled Action	Completed
Torosa South Initial Appraisal Drilling	2007/3500	Controlled Action	Completed
Not controlled action			

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
3D marine seismic survey in WA 314P and WA 315P	2004/1927	Not Controlled Action	Completed
Drilling of exploration wells, Permit areas WA-301-P to WA-305-P	2002/769	Not Controlled Action	Completed
Not controlled action (particular manner)			
2D seismic survey in permit areas WA-274P and WA-281P	2004/1521	Not Controlled Action (Particular Manner)	Post-Approval
3D marine seismic Survey - Maxima 3D MSS	2006/2945	Not Controlled Action (Particular Manner)	Post-Approval
3D Seismic Survey, Browse Basin, WA	2009/5048	Not Controlled Action (Particular Manner)	Post-Approval
3D Seismic Survey, near Scott Reef, Browse Basin	2005/2126	Not Controlled Action (Particular Manner)	Post-Approval
Conduct an exploration drilling campaign	2011/5964	Not Controlled Action (Particular Manner)	Post-Approval
Endurance 3D Marine Seismic Data Acquisition Survey	2007/3667	Not Controlled Action (Particular Manner)	Post-Approval
Exploration Drilling Program - Permit areas - WA-314-P, WA-315-P, WA-398-P.	2008/4064	Not Controlled Action (Particular Manner)	Post-Approval
Gigas 2D Pilot Ocean Bottom Cable Marine Seismic Survey	2007/3839	Not Controlled Action (Particular Manner)	Post-Approval
Kingtree & Ironstone-1 Exploration Wells	2011/5935	Not Controlled Action (Particular Manner)	Post-Approval
Kraken, Lusca & Asperus 3D Marine Seismic Survey	2013/6730	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Offshore Fibre Optic Cable Network Construction & Operation, Port Hedland WA to Darwin NT	2014/7223	Not Controlled Action (Particular Manner)	Post-Approval
Pilot Appraisal Well - Torosa South 1	2008/3991	Not Controlled Action (Particular Manner)	Post-Approval
Rosebud 3D Marine Seismic Survey in WA-30-R and TR/5	2012/6493	Not Controlled Action (Particular Manner)	Post-Approval
Schild Phase 11 MC3D Marine Seismic Survey, Browse Basin	2013/6894	Not Controlled Action (Particular Manner)	Post-Approval
Scott Reef Seismic Research	2006/2647	Not Controlled Action (Particular Manner)	Post-Approval
Torosa-5 Apraisal Well, WA-30-R	2008/4430	Not Controlled Action (Particular Manner)	Post-Approval
Tridacna 3D Ocean Bottom Cable Marine Seismic Survey	2011/5959	Not Controlled Action (Particular Manner)	Post-Approval
Vampire 2D Non Exclusive Seismic Survey, WA	2010/5543	Not Controlled Action (Particular Manner)	Post-Approval
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
Experimental Study of Behavioural and Physiological Impact on Fish of Seismic Ex	2006/2625	Referral Decision	Completed
Pilot Appraisal Well - Torosa South-1	2008/3985	Referral Decision	Completed
Seismic Data Acquisition, Browse Basin	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
Continental Slope Demersal Fish Communities	North-west
Seringapatam Reef and Commonwealth waters in the Scott Reef Complex	North-west

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence
Marine Turtles		
Chelonia mydas Green Turtle [1765]	Internesting	Known to occur
Chelonia mydas Green Turtle [1765]	Internesting buffer	Known to occur
Chelonia mydas Green Turtle [1765]	Nesting	Known to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Internesting buffer	Known to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Nesting	Known to occur
Seabirds		
Sternula albifrons sinensis Little Tern [82850]	Resting	Known to occur
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Migration	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is 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 on the contents of this report.

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 point locations and environmental data layers.

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 when time permits.

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 breeding sites; and
- 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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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: 04-Dec-2025

Operational Area B Brecknock Calliance

Summary

Details

- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat

Acknowledgements

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	3
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	25
Listed Migratory Species:	40

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	1
Listed Marine Species:	69
Whales and Other Cetaceans:	23
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	1

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	1
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	20
Key Ecological Features (Marine):	2
Biologically Important Areas:	7
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Commonwealth Marine Area [Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Anous tenuirostris melanops		
Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris canutus		
Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Papasula abbotti		
Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area
Phaethon lepturus fulvus		
Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Phaethon rubricauda westralis		
Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird [91824]	Endangered	Species or species habitat known to occur within area
Sternula albifrons		
Little Tern [82849]	Vulnerable	Congregation or aggregation 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
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely 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 foliosquama		
Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat may occur within area
Aipysurus fuscus		
Dusky Sea Snake [1119]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
SHARK		
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Glyphis garricki Northern River Shark, New Guinea River Shark [82454]	Endangered	Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
null		
Balaenoptera omurai		
Omura's Whale [87136]		Species or species habitat likely to occur within area
Migratory Marine Birds		
Anous stolidus		
Common Noddy [825]		Species or species habitat likely to occur within area
Calonectris leucomelas		
Streaked Shearwater [1077]		Species or species habitat known to occur within area
Fregata ariel		
Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
Fregata minor		
Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
Phaethon lepturus		
White-tailed Tropicbird [1014]		Species or species habitat likely to occur within area
Phaethon rubricauda		
Red-tailed Tropicbird [994]		Species or species habitat known to occur within area
Sternula albifrons		
Little Tern [82849]	Vulnerable	Congregation or aggregation known to occur within area
Migratory Marine Species		
Anoxypristis cuspidata		
Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat may occur within area
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
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 likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely 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

Scientific Name	Threatened Category	Presence Text
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely 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	Foraging, feeding or related behaviour likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat may occur within area
Migratory Terrestrial Species		
Cecropis daurica Red-rumped Swallow [80610]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hirundo rustica Barn Swallow [662]		Species or species habitat known to occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Commonwealth Heritage Places		[Resource Information]
Name	State	Status
Natural		
Scott Reef and Surrounds - Commonwealth Area	EXT	Listed place

Listed Marine Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Bird		
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	Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Cecropis daurica as Hirundo daurica Red-rumped Swallow [80610]		Species or species habitat may occur within area overfly marine area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
Hirundo rustica Barn Swallow [662]		Species or species habitat known to occur within area overfly marine area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Papasula abbotti Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat likely to occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat known to occur within area
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Congregation or aggregation known to occur within area
Fish		

Scientific Name	Threatened Category	Presence Text
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 intestinalis Australian Messmate Pipefish, Banded Pipefish [66202]		Species or species habitat may occur within area
Corythoichthys schultzi Schultz's Pipefish [66205]		Species or species habitat may occur within area
Cosmocampus banneri Roughridge Pipefish [66206]		Species or species habitat may occur within area
Doryrhamphus dactyliophorus Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		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 spinirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophorus Ribboned Pipehorse, Ribboned Seadragon [66226]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Trachyrhamphus longirostris Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Reptile		
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 foliosquama Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Aipysurus fuscus Dusky Sea Snake [1119]	Endangered	Species or species habitat known to occur within area
Aipysurus laevis Olive Sea Snake, Olive-brown Sea Snake [1120]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Emydocephalus annulatus Eastern Turtle-headed Sea Snake [1125]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Hydrophis elegans Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area
Hydrophis kingii as Disteira kingii Spectacled Sea Snake [93511]		Species or species habitat may occur within area
Hydrophis major as Disteira major Olive-headed Sea Snake [93512]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hydrophis ornatus Spotted Sea Snake, Ornate Reef Sea Snake [1111]		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
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Whales and Other Cetaceans		[Resource Information]
Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera borealis Sei Whale [34]	Vulnerable	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 omurai Omura's Whale [87136]		Species or species habitat likely to occur within area

Current Scientific Name	Status	Type of Presence
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely 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

Current Scientific Name	Status	Type of Presence
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat may occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Habitat Critical to the Survival of Marine Turtles		[Resource Information]
Scientific Name	Behaviour	Presence
Oct - Mar		
Chelonia mydas Green Turtle [1765]	Nesting	Known to occur

Extra Information

State and Territory Reserves		[Resource Information]
Protected Area Name	Reserve Type	State
Scott Reef	Nature Reserve	WA

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
2 geotechnical surveys - preliminary and final	2006/2886		Completed
Browse Carbon Capture and Storage Project	2024/10028		Referral Decision
Browse to North West Shelf Development, Indian Ocean, WA	2018/8319		Approval
Deep Water Northwest Shelf 2D Seismic Survey	2007/3260		Completed
Controlled action			
2-D seismic survey Scott Reef	2000/125	Controlled Action	Post-Approval
Browse FLNG Development, Commonwealth Waters	2013/7079	Controlled Action	Post-Approval
Development of Browse Basin Gas Fields (Upstream)	2008/4111	Controlled Action	Completed
Torosa South Initial Appraisal Drilling	2007/3500	Controlled Action	Completed
Not controlled action			
Drilling of exploration wells, Permit areas WA-301-P to WA-305-P	2002/769	Not Controlled Action	Completed
Not controlled action (particular manner)			
3D marine seismic Survey - Maxima 3D MSS	2006/2945	Not Controlled Action (Particular Manner)	Post-Approval
3D Seismic Survey, near Scott Reef, Browse Basin	2005/2126	Not Controlled Action (Particular Manner)	Post-Approval
Endurance 3D Marine Seismic Data Acquisition Survey	2007/3667	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Kingtree & Ironstone-1 Exploration Wells	2011/5935	Not Controlled Action (Particular Manner)	Post-Approval
Offshore Fibre Optic Cable Network Construction & Operation, Port Hedland WA to Darwin NT	2014/7223	Not Controlled Action (Particular Manner)	Post-Approval
Rosebud 3D Marine Seismic Survey in WA-30-R and TR/5	2012/6493	Not Controlled Action (Particular Manner)	Post-Approval
Scott Reef Seismic Research	2006/2647	Not Controlled Action (Particular Manner)	Post-Approval
Vampire 2D Non Exclusive Seismic Survey, WA	2010/5543	Not Controlled Action (Particular Manner)	Post-Approval
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval
Woodside Southern Browse 3D Seismic Survey, WA	2007/3534	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
Experimental Study of Behavioural and Physiological Impact on Fish of Seismic Ex	2006/2625	Referral Decision	Completed

Key Ecological Features [Resource Information]

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

Name	Region
Continental Slope Demersal Fish Communities	North-west
Seringapatam Reef and Commonwealth waters in the Scott Reef Complex	North-west

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence
Marine Turtles		

Scientific Name	Behaviour	Presence
Chelonia mydas Green Turtle [1765]	Internesting	Likely to occur
Chelonia mydas Green Turtle [1765]	Internesting buffer	Known to occur
Chelonia mydas Green Turtle [1765]	Nesting	Known to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Internesting buffer	Known to occur
Seabirds		
Sternula albifrons sinensis Little Tern [82850]	Resting	Known to occur
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Migration	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is 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 on the contents of this report.

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 point locations and environmental data layers.

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 when time permits.

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 breeding sites; and
- 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-Feb-2026

Commonwealth EMBA for Torosa and Brecknock Calliance

Summary

Details

- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat

Acknowledgements

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	5
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	30
Listed Migratory Species:	58

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	2
Commonwealth Heritage Places:	2
Listed Marine Species:	90
Whales and Other Cetaceans:	26
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	4
Habitat Critical to the Survival of Marine Turtles:	1

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	1
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	51
Key Ecological Features (Marine):	4
Biologically Important Areas:	30
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity
Ashmore reef national nature reserve	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 Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Anous tenuirostris melanops		
Australian Lesser Noddy [26000]	Vulnerable	Breeding known to occur within area
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

Scientific Name	Threatened Category	Presence Text
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat known to occur within area
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
Sternula albifrons Little Tern [82849]	Vulnerable	Congregation or aggregation 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
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely 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 may occur within area
Aipysurus fuscus Dusky Sea Snake [1119]	Endangered	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text
SHARK		
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Glyphis garricki Northern River Shark, New Guinea River Shark [82454]	Endangered	Species or species habitat may occur within area
Pristis pristis Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat may occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
null		
Balaenoptera omurai Omura's Whale [87136]		Species or species habitat likely to occur within area
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Breeding known to occur within area
Ardenna pacifica Wedge-tailed Shearwater [84292]		Breeding known to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Breeding known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Breeding known to occur within area
Hydroprogne caspia Caspian Tern [808]		Breeding known to occur within area
Onychoprion anaethetus Bridled Tern [82845]		Breeding known to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Breeding known to occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Breeding known to occur within area
Sterna dougallii Roseate Tern [817]		Breeding known to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Congregation or aggregation known to occur within area
Sula dactylatra Masked Booby [1021]		Breeding known to occur within area
Sula leucogaster Brown Booby [1022]		Breeding known to occur within area
Sula sula Red-footed Booby [1023]		Breeding known to occur within area
Migratory Marine Species		
Anoxypristis cuspidata Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat may occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
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
Carcharias taurus Grey Nurse Shark [64469]		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	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Dugong dugon Dugong [28]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
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 likely to occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat known to occur within area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pristis pristis Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Pristis zijsron		
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Tursiops aduncus (Arafura/Timor Sea populations)		
Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat may 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		
Acrocephalus orientalis		
Oriental Reed-Warbler [59570]		Species or species habitat known to occur within area
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat known to occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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 melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Thalasseus bergii Greater Crested Tern [83000]		Breeding 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
Department of Climate Change, Energy, the Environment and Water	
Ashmore Reef National Nature Reserve [CHL_105218]	EXT

Commonwealth Land Name	State
Scott Reef and Surrounds - Commonwealth Area [CHL_105480]	EXT

Commonwealth Heritage Places [Resource Information]

Name	State	Status
Natural		
Ashmore Reef National Nature Reserve	EXT	Listed place
Scott Reef and Surrounds - Commonwealth Area	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
Anous minutus Black Noddy [824]		Breeding known to occur within area
Anous stolidus Common Noddy [825]		Breeding known to occur within area
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Breeding known to occur within area
Ardenna pacifica as Puffinus pacificus Wedge-tailed Shearwater [84292]		Breeding known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	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 overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Cecropis daurica as Hirundo daurica Red-rumped Swallow [80610]		Species or species habitat may occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	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
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
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

Scientific Name	Threatened Category	Presence Text
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]		Species or species habitat may occur within area
Papasula abbotti Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Breeding known to 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 Red-tailed Tropicbird [994]		Breeding known to occur within area
Sterna dougallii Roseate Tern [817]		Breeding known to occur within area
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Congregation or aggregation known to occur within area
Sula dactylatra Masked Booby [1021]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
[Sula leucogaster](#) Brown Booby [1022]		Breeding known to occur within area
[Sula sula](#) Red-footed Booby [1023]		Breeding known to occur within area
[Thalasseus bengalensis as Sterna bengalensis](#) Lesser Crested Tern [66546]		Breeding known to occur within area
[Thalasseus bergii as Sterna bergii](#) Greater Crested Tern [83000]		Breeding known to occur within area
Fish		
[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 intestinalis](#) Australian Messmate Pipefish, Banded Pipefish [66202]		Species or species habitat may occur within area
[Corythoichthys schultzi](#) Schultz's Pipefish [66205]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Cosmocampus banneri Roughridge Pipefish [66206]		Species or species habitat may occur within area
Doryrhamphus dactyliophorus Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area
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 spinirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophorus Ribboned Pipehorse, Ribboned Seadragon [66226]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
[Trachyrhamphus longirostris](#) Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Mammal		
[Dugong dugon](#) Dugong [28]		Breeding 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 duboisii](#) Dubois' Sea Snake, Dubois' Seasnake, Reef Shallows Sea Snake [1116]		Species or species habitat may occur within area
[Aipysurus foliosquama](#) Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat may occur within area
[Aipysurus fuscus](#) Dusky Sea Snake [1119]	Endangered	Species or species habitat known to 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	Foraging, feeding or related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Emydocephalus annulatus Eastern Turtle-headed Sea Snake [1125]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Hydrophis coggeri Cogger's Sea Snake, Black-headed Sea Snake [25925]		Species or species habitat may occur within area
Hydrophis elegans Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area
Hydrophis hardwickii as Lapemis hardwickii Spine-bellied Sea Snake [93516]		Species or species habitat may occur within area
Hydrophis kingii as Disteira kingii Spectacled Sea Snake [93511]		Species or species habitat may occur within area
Hydrophis macdowelli as Hydrophis mcdowelli MacDowell's Sea Snake, Small-headed Sea Snake, [75601]		Species or species habitat may occur within area
Hydrophis major as Disteira major Olive-headed Sea Snake [93512]		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 peronii as Acalyptophis peronii Horned Sea Snake [93509]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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
Lepidochelys olivacea		
Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour likely to 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 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 omurai		
Omura's Whale [87136]		Species or species habitat likely to occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Delphinus delphis		
Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
Lagenodelphis hosei Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat may occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat may occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks	[Resource Information]
Park Name	Zone & IUCN Categories
Kimberley	Multiple Use Zone (IUCN VI)
Argo-Rowley Terrace	National Park Zone (IUCN II)
Ashmore Reef	Recreational Use Zone (IUCN IV)

Park Name	Zone & IUCN Categories
Ashmore Reef	Sanctuary Zone (IUCN Ia)

Habitat Critical to the Survival of Marine Turtles		[Resource Information]
Scientific Name	Behaviour	Presence
Oct - Mar		
Chelonia mydas		
Green Turtle [1765]	Nesting	Known to occur

Extra Information

State and Territory Reserves		[Resource Information]
Protected Area Name	Reserve Type	State
Scott Reef	Nature Reserve	WA

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
2 geotechnical surveys - preliminary and final	2006/2886		Completed
Browse Carbon Capture and Storage Project	2024/10028		Referral Decision
Browse to North West Shelf Development, Indian Ocean, WA	2018/8319		Approval
Deep Water Northwest Shelf 2D Seismic Survey	2007/3260		Completed
Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia West	2024/09826		Completed
Controlled action			
2-D seismic survey Scott Reef	2000/125	Controlled Action	Post-Approval
Browse FLNG Development, Commonwealth Waters	2013/7079	Controlled Action	Post-Approval
Conduct an exploration drilling campaign	2010/5718	Controlled Action	Completed
Develop Ichthys gas-condensate field permit area W	2006/2767	Controlled Action	Completed
Development of Browse Basin Gas Fields (Upstream)	2008/4111	Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Ichthys Gas Field, Offshore and onshore processing facilities and subsea pipeline	2008/4208	Controlled Action	Post-Approval
Torosa South Initial Appraisal Drilling	2007/3500	Controlled Action	Completed
Not controlled action			
3D marine seismic survey in WA 314P and WA 315P	2004/1927	Not Controlled Action	Completed
Adele Trend TQ3D Seismic Survey	2001/252	Not Controlled Action	Completed
Drilling of exploration wells, Permit areas WA-301-P to WA-305-P	2002/769	Not Controlled Action	Completed
P30 Hydrocarbon Exploration Well	2001/293	Not Controlled Action	Completed
Not controlled action (particular manner)			
2 (3D) Marine Seismic Surveys	2009/4994	Not Controlled Action (Particular Manner)	Completed
2D seismic survey in permit areas WA-274P and WA-281P	2004/1521	Not Controlled Action (Particular Manner)	Post-Approval
3D marine seismic Survey - Maxima 3D MSS	2006/2945	Not Controlled Action (Particular Manner)	Post-Approval
3D Seismic Survey, Browse Basin, WA	2009/5048	Not Controlled Action (Particular Manner)	Post-Approval
3D Seismic Survey, near Scott Reef, Browse Basin	2005/2126	Not Controlled Action (Particular Manner)	Post-Approval
Aurora MC3D Marine Seismic Survey	2010/5510	Not Controlled Action (Particular Manner)	Post-Approval
Cartier East and Cartier West 3D Marine Seismic Surveys	2009/5230	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Caswell MC3D Marine Seismic Survey	2012/6594	Not Controlled Action (Particular Manner)	Post-Approval
Conduct an exploration drilling campaign	2011/5964	Not Controlled Action (Particular Manner)	Post-Approval
Endurance 3D Marine Seismic Data Acquisition Survey	2007/3667	Not Controlled Action (Particular Manner)	Post-Approval
Exploration Drilling Campaign	2011/6047	Not Controlled Action (Particular Manner)	Post-Approval
Exploration Drilling Program - Permit areas - WA-314-P, WA-315-P, WA-398-P.	2008/4064	Not Controlled Action (Particular Manner)	Post-Approval
Geoscience Australia - Marine survey in Browse Basin to acquire data to assist assessment of CO2 sto	2013/6747	Not Controlled Action (Particular Manner)	Post-Approval
Gicea 3D Marine Seismic Survey	2008/4389	Not Controlled Action (Particular Manner)	Post-Approval
Gigas 2D Pilot Ocean Bottom Cable Marine Seismic Survey	2007/3839	Not Controlled Action (Particular Manner)	Post-Approval
Ichthys 3D Marine Seismic Survey	2010/5550	Not Controlled Action (Particular Manner)	Post-Approval
Kingtree & Ironstone-1 Exploration Wells	2011/5935	Not Controlled Action (Particular Manner)	Post-Approval
Kraken, Lusca & Asperus 3D Marine Seismic Survey	2013/6730	Not Controlled Action (Particular Manner)	Post-Approval
Offshore Fibre Optic Cable Network Construction & Operation, Port Hedland WA to	2014/7223	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Darwin NT		Manner)	
Offshore Gas Exploration Drilling Campaign	2012/6384	Not Controlled Action (Particular Manner)	Post-Approval
Pilot Appraisal Well - Torosa South 1	2008/3991	Not Controlled Action (Particular Manner)	Post-Approval
Rosebud 3D Marine Seismic Survey in WA-30-R and TR/5	2012/6493	Not Controlled Action (Particular Manner)	Post-Approval
Schild MC3D Marine Seismic Survey	2012/6373	Not Controlled Action (Particular Manner)	Post-Approval
Schild Phase 11 MC3D Marine Seismic Survey, Browse Basin	2013/6894	Not Controlled Action (Particular Manner)	Post-Approval
Scott Reef Seismic Research	2006/2647	Not Controlled Action (Particular Manner)	Post-Approval
Torosa-5 Apraisal Well, WA-30-R	2008/4430	Not Controlled Action (Particular Manner)	Post-Approval
Tridacna 3D Ocean Bottom Cable Marine Seismic Survey	2011/5959	Not Controlled Action (Particular Manner)	Post-Approval
Vampire 2D Non Exclusive Seismic Survey, WA	2010/5543	Not Controlled Action (Particular Manner)	Post-Approval
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval
Woodside Southern Browse 3D Seismic Survey, WA	2007/3534	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			

Title of referral	Reference	Referral Outcome	Assessment Status
Referral decision			
Aurora extension MC3D Marine Seismic Survey	2011/5887	Referral Decision	Completed
BRSN08 3D Marine Seismic Survey	2008/4582	Referral Decision	Completed
Experimental Study of Behavioural and Physiological Impact on Fish of Seismic Ex	2006/2625	Referral Decision	Completed
Pilot Appraisal Well - Torosa South-1	2008/3985	Referral Decision	Completed
Seismic Data Acquisition, Browse Basin	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
Ancient coastline at 125 m depth contour	North-west
Ashmore Reef and Cartier Island and surrounding Commonwealth waters	North-west
Continental Slope Demersal Fish Communities	North-west
Seringapatam Reef and Commonwealth waters in the Scott Reef Complex	North-west

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence
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 (high density seagrass beds)	Known to occur

Scientific Name	Behaviour	Presence
Dugong dugon Dugong [28]	Nursing	Known to occur
Marine Turtles		
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]	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
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
Seabirds		
Ardenna pacifica Wedge-tailed Shearwater [84292]	Breeding	Known to occur

Scientific Name	Behaviour	Presence
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]	Resting	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
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Migration	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is 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 on the contents of this report.

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 point locations and environmental data layers.

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 when time permits.

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 breeding sites; and
- 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

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NOPSEMA
Australia's offshore energy regulator

FORM

Report of an Accident Dangerous Occurrence Well Integrity or Environmental Incident

Document No: N-03300-FM0831 A159980
Date: 2/12/2025

Accidents, dangerous occurrences, well and environmental reportable incidents can all be reported using this form.

Where an incident occurs, and the titleholder and operator are not the same organisation and have different reporting requirements under the OPGGS Act and regulations, each organisation must submit a separate report.

This form should be used in conjunction with NOPSEMA Guidance Note N-03300-GN2303 - Notification Reporting and Reporting Requirements for Incidents available on the NOPSEMA website.

Part 1 is required within 3 days of a notified incident.

Part 2 is required within 30 days of a notified accident or dangerous occurrence incident.

This form and any attachments are to be submitted by either:

Email: **submissions@nopsema.gov.au** for documents less than 10 MB; or

Secure file transfer: https://securefile.nopsema.gov.au/filedrop/submissions.

NOPSEMA considers that a full report will contain copies of documentary material referenced and/or relied on in the course of completing this form, which may include (but not be limited to) as appropriate: witness statements, management system documents, drawings, diagrams and photographs, third party reports (audit, inspection, material analysis etc.), internal records and correspondence.

Date and time of the initial verbal incident notification to NOPSEMA			
Date		**Time**	

Was NOPSEMA notified through the dedicated notification phone line?			
Yes/No		**If no, who was contacted at NOPSEMA**	

Notification Number provided by NOPSEMA for this incident	
Reference	

Date and time of this written incident report			
Date		**Time**	

Is this the initial incident report?	
Yes/No	

What type of incident is being reported?		***Tick all appropriate incident types***
Accident or dangerous occurrence		Complete parts 1A, 1B, 1E, 1F & 2
Well incident		Complete parts 1A, 1C, 1E, 1F
Environmental incident		Complete parts 1A, 1D, 1E, 1F

What category of incident is being reported?		***Tick all appropriate category types***
To use electronically: MS Word 2007-10 – click in check box		
Accidents	Death Serious Injury Lost time injury ≥3 days	☐ ☐ ☐
Dangerous occurrences	Could have caused death, serious injury or Lost time injury ≥3 days Fire or explosion Collision marine vessel and facility Uncontrolled hydrocarbon release >1 kg or ≥80 L (gas or liquid) Well kick >8 m^3 or 50 barrels Damage, loss or removal of a technical or other control measure critical to safety Pipeline incident Unplanned event – implement ERP Other _____	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
Wells	Loss of integrity release >1 kg (gas) Loss of integrity >80 L (liquid) A build-up of pressure or a positive flow check and operation of the BOP Flow from a well has been diverted Failure of well-related equipment Damage to well-related equipment Other unplanned occurrence requiring measures to regain control of the well	☐ ☐ ☐ ☐ ☐ ☐ ☐
Environmental	Hydrocarbon release Chemical release Drilling fluid/mud release Other substance release Loss of waste/materials/equipment EPBC list species death or injury/near miss Detection of marine pest/invasive marine species Displacement of other marine user Underwater cultural heritage, including First Nations underwater cultural heritage Other _____	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Part 1A – Information Required within 3 Days of a Reportable Incident

1. Where did the incident occur? *Fill in all information applicable to the incident location. Multiple facilities/wells may be included if appropriate.*	
Did the incident occur on a facility or Associated Offshore Place (AOP)?	
If yes what type of facility?	Facility or AOP name:
FPSO ☐	
MODU ☐	
Platform – manned ☐	
Platform – not normally manned ☐	
Vessel ☐	
Did the incident occur on a pipeline?	If yes pipeline name:
Did the incident involve a well or wells?	If yes well(s) name and title(s):
Incident location (Provide datum used i.e. GDA2020)	Latitude: Longitude:
Name of petroleum activity being undertaken?	
2. Who is the registered operator/titleholder or person that controls the works site or activity?	
Name	
Position	
Business address	
Business phone no.	
3. When did the incident occur?	
Date	
Time and time zone	
4. Details of person submitting this form.	
Name	
Position	
Email	
Telephone no.	

5. Details of any witnesses. *If more witnesses, copy and insert this section.*	
Full name	
Phone no. (Business hours)	
Phone no. (Home) (Mobile)	
Email (Business) (Private)	
Postal address	

6. Brief description of incident.

7. Work or activity being undertaken at time of incident.

8. What are the internal investigation arrangements?

9. Was there any loss of containment?		
Yes or No *If yes, provide details below*		
Type of loss	Hydrocarbon fluid Hydrocarbon gas Hydrocarbon gas and fluid Non-hydrocarbon gas Chemical Drilling fluid/mud Formation/Produced formation water Hydraulic oil Diesel/Fuel oil Waste Other	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
Estimated quantity *Liquid (L), Gas (kg)*		
Estimation Type *Calculation or measurement*		

Composition *Percentage and description*				
Known toxicity to people and/or environment	Yes ☐ No ☐ If yes, provide Safety Data Sheet and ecotox, bioaccumulation and persistence data (if available).			
What equipment was involved in the release?				
Is the equipment critical to safety?				
How was the leak/spill detected?	Fire & gas detection CCTV Visual	☐ ☐ ☐	Other	☐
Did ignition occur?	No Yes	☐ ☐	Immediate Delayed	☐ ☐
If yes, what was the likely ignition source?	Hotwork Spark electrical source Spark metallic contact Hot surface	☐ ☐ ☐ ☐	Other	☐

10. Hydrocarbon release details.

System of hydrocarbon release	Process Drilling Subsea / Pipeline	☐ ☐ ☐	Utilities Well related Marine	☐ ☐ ☐
Estimated inventory in the isolatable system *Liquid (L), Gas (kg)*				
System pressure and size of piping or vessel	Pressure *(MPag)*			
	Size *Piping diameter (mm)* *Piping length (mm)* *or Vessel volume (L)*			
Estimated equivalent hole diameter *(mm)*				

11. Has the release been stopped and/or contained?

Yes or No	
Duration of the release *hh:mm:ss*	
Estimated rate of release *Liquid (L), Gas (kg) per hour*	

Part 1B - Complete for accidents or dangerous occurrences

12. Action taken to make the work-site safe.					
Was permission given by a NOPSEMA inspector to interfere with the site? OPGGS(S)R 2.49. Yes ☐ No ☐					
Action taken					
Details of any disturbance of the work site					
13. Was an emergency response initiated? Yes ☐ No ☐					
Type of response	Manual Automatic alarm	☐ ☐	Muster Evacuation	☐ ☐	
How effective was the emergency response?					
14. Was anyone killed or injured? *Provide details below* Yes ☐ No ☐					
Injured person (IP)					
If different from Part 1A. Employer name		Employer address			
Employer phone no.		Employer email			
IP full name					
IP date of birth		Gender	Male ☐	Female ☐	
			Indeterminate/Intersex/Unspecified ☐		
IP residential address					
IP phone no. (Work)		IP phone no. (Home) (Mobile)			
IP occupation/job title		Core employee or contractor			
Circumstances of injury					

Based on TOOCS (refer to References) Nature of injury	a. Intracranial injury	☐	g. Other injuries	☒
	b. Fractures	☐	h. Mental disease	☐
	c. Wounds, lacerations, amputations, internal organ damage	☐	i. Skin and subcutaneous tissue diseases	☐
			j. Respiratory system diseases	☐
	d. Burn	☐	k. Circulatory system diseases	☐
	e. Injury to nerves and spinal cord	☐	l. Other diseases	☐
	f. Traumatic joint/ligament and muscle/tendon injury	☐	Not provided	
Location (On body)	G1 - 11 Cranium	☐	G5 - 53 Knee	☐
	G1 - 12 Eye	☐	G5 - 54 Lower leg	☐
	G1 - 13 Ear	☐	G5 - 55 Ankle	☐
	G1 - 14 Mouth	☐	G5 - 56 Foot and toes	☐
	G1 - 15 Nose	☐	G5 - 58 Lower limb - multiple locations	☐
	G1 - 16 Face - not elsewhere classified	☐	G6 - 61 Neck and trunk	☐
	G1 - 18 Head - multiple locations	☐	G6 - 62 Head and neck	☐
	G2 - 21 Neck	☐	G6 - 63 Head and other	☐
	G3 - 31 Back - upper and lower	☐	G6 - 64 Trunk and limbs	☐
	G3 - 33 Chest (thorax)	☐	G6 - 65 Upper and lower limbs	☐
	G3 - 34/ 35 Abdomen and pelvic region	☐	G6 - 66 Neck and shoulder	☐
	G3 - 38 Trunk - multiple locations	☐	G6 - 68 Other specified multiple locations	☐
	G3 - 39 Trunk - unspecified locations	☐	G7 - 71 Circulatory system	☐
	G4 - 41 Shoulder	☐	G7 - 72 Respiratory system	☐
	G4 - 42 Upper arm	☐	G7 - 74 Genitourinary system	☐
	G4 - 43 Elbow	☐	G7 - 75 Nervous system	☐
	G4 - 44 Forearm	☐	G7 - 78 Other and multiple systemic conditions	☐
	G4 - 45 Wrist	☐		
	G4 - 46 Hand fingers and thumb	☐	G7 - 79 Unspecified systemic conditions	☐
	G4- 48 Upper limb - multiple locations	☐	G8 - 80 Psychological system	☐
	G5 - 51 Hip	☐	G9 - 90 Unspecified locations	☐
	G5 - 52 Upper leg	☐	Not provided	☐
Mechanism of injury	G0 - 01 Falls from a height	☐	G5 - 53 Exposure to environmental heat	☐
	G0 - 02 Falls on the same level	☐	G5 - 54 Exposure to environmental cold	☐
	G0 - 03 Stepping kneeling or sitting on objects	☐	G5 - 57 Contact with electricity	☐
	G1 - 11 Hitting stationary objects	☐	G5 - 59 Exposure to other and unspecified environmental factors	☐
	G1 - 12 Hitting moving object	☐		
	G2 - 21 Being hit by falling objects	☐	G6 - 61 Single contact with chemical or substance	☐
	G2 - 25 Being trapped by moving machinery or equipment	☐	G6 - 62 Long term contact with chemicals or substances	☐
	G2 - 26 Being trapped between stationary and moving objects	☐	G6 - 69 Other and unspecified contact with chemical or substance	☐
	G2 - 27 Exposure to mechanical vibration	☐		
	G2 - 28 Being hit by moving objects	☐	G8 - 81 Exposure to a traumatic event	☐
	G3 - 31 Exposure to single, sudden sound	☐	G8 - 82 Exposure to workplace or occupational violence	☐
	G3 - 32 Long-term exposure to sound	☐		
	G3 - 38 Explosion	☐	G8 - 84 Work pressure	☐
	G4 - 41 Muscular stress while lifting, carrying or putting down objects	☐	G8 - 85 Suicide or attempted suicide	☐
			G8 - 86 Other mental stress factors	☐
	G4 - 42 Muscular stress while handling objects other than lifting, carrying or putting down	☐	G8 - 87 Work related harassment and/or workplace bullying	☐
	G4 - 43 Muscular stress with no objects being handled	☐	G8 - 88 Other harassment	☐
			G9 - 98 Other and multiple mechanisms of incident	☐
	G4 - 44 Repetitive movement, low muscle loading	☐		
	G5 - 51 Contact with hot objects	☐	G9 - 99 Unspecified mechanisms of incident	☐
	G5 - 52 Contact with cold objects	☐	Not provided'	
Agency of injury	1. Machinery and (mainly) fixed plant	☐	6. Chemicals and chemical products	☐
	2. Mobile plant or transport	☐	7. Material and substances	☐
	3. Powered equipment, tools and appliances	☐	8. Environmental agencies	☐
	4. Non-power hand tools, appliances and equipment	☐	9. Animal, human and biological agencies	☐
	5. Chemicals and chemical products	☐	10. Other and unspecified agencies	☐
			Not provided _____	☐

Details of job being undertaken				
Day and hour of shift	Day *e.g. 5th day of 7 (5 / 7)*		Hour *e.g. 3rd hour of 12 (3 / 12)*	

NB: Copy/paste this section *for each additional injured person and insert here*

15. Was anyone incapacitated from performing work for three or more days (>3 day Loss Time Injury)
Yes ☐ No ☐

Has the worker been cleared to return to full duties?	Yes ☐ No ☐
If not yet returned to work when is the worker expected to be cleared to return to full time duties?	
Total number of workdays lost at time of this report being submitted?	
At the time of this report being submitted is the injury still classified as a LTI >3Days, and if not, what is the new injury classification?	

NB: The injury and workdays lost should be reported to NOPSEMA in the Monthly Operational Activities Report

16. Was there any serious damage? *Provide details below.* Yes ☐ No ☐

Item 1	
Equipment damaged	
Extent of damage	
Will the equipment be shut down?	Yes ☐ No ☐
If yes, for how long?	

NB: Copy/paste this section for each additional item and insert here

17. Will the facility be shut down? *Provide details below.* Yes ☐ No ☐

Facility shutdown	Date		dd/mm/yyyy
	Time		24-hour clock
	Duration		days / hours / minutes

18. What were the immediate causes of the incident?

Part 1C – Complete for Well Incidents

19. What is the WOMP relating to the well?	
WOMP Name Document number Version	
20. Well Phase or Activity	
Drilling Completions Interventions Production Other (please describe)	☐ ☐ ☐ ☐ ☐
21. Brief description of current well status and condition (e.g. Shut-in, Producing, Barrier status etc, Stabilised pressures etc)	
22. Details of all material facts and circumstances concerning the reportable incident that the titleholder knows or is able, by reasonable search or enquiry, to find out.	

23. What were the causes of the incident? *This section should include a detailed analysis of the failure mode, including demonstration that an appropriate internal investigation has been completed in line with the titleholder's management systems, and provide evidence of the internal assurance of the outcomes of the investigation.* *This section should also cover the risk of the same incident occurring in other wells operated by the titleholder (e.g. rule out a systemic issue)* *If this information is not available within the 3 days requirement contact NOPSEMA.*

Part 1D – Complete for environmental incidents

24. What is the accepted environment plan for this incident?		
Environment plan name Document number Version		
25. Has the incident resulted in an impact to the environment? *Provide details below.* Yes ☐ No ☐		
Incident details *e.g. estimated area of impact, nature/significance of impact*		
Environmental Receptors	Open ocean ☐ Shoreline ☐ Population centre ☐ Stakeholders ☐ Other sensitivity ☐ *e.g. conservation area, nesting beach*	Macroalgae ☐ Coral Reef ☐ Benthic invertebrates ☐ Seagrass ☐ Mangrove ☐

Environment Receptor	
Environmental receptor	
Location of environment receptor	
Latitude (Provide datum used i.e. GDA2020)	
Longitude (Provide datum used i.e. GDA2020)	
Date and time of impact	
Action taken to minimise exposure	
Specify each matter protected under Part 3 of the EPBC Act impacted	
NB: Copy/paste this section for each additional environmental receptor and insert here	

26. Are any environments at risk of impact, including as a result of spill response measures? *Provide details below.* **Yes ☐ No ☐**		
Details *e.g. zone of potential impact*		
Environmental Receptors	Open ocean ☐ Shoreline ☐ Population centre ☐ Stakeholders ☐ Other sensitivity ☐ *e.g. conservation area, nesting beach*	Macroalgae ☐ Coral Reef ☐ Benthic invertebrates ☐ Seagrass ☐ Mangrove ☐

Environment Receptor	
Estimated location of 'at-risk' environments	
Estimated impact date & time	
Action required to minimise exposure	

Specify each matter protected under Part 3 of the EPBC Act at risk	
NB: Copy/paste this section for each additional environmental receptor and insert here	
27. Was an oil pollution emergency plan activated? *Provide details below.* **Yes ☐ No ☐**	
If yes, what action has been implemented /planned?	
If yes, how effective is/was the spill response?	
28. Was an environmental monitoring program initiated? *Provide details below.* **Yes ☐ No ☐**	
If yes, what actions have been implemented and/or planned?	
29. Did the incident result in the death or injury of any fauna? *Provide details below.* **Yes ☐ No ☐**	

Injured fauna	**Species 1**	**Species 2**	**Species 3**
Species name (common or scientific name)			
Number of individuals killed or injured	Killed: Injured:	Killed: Injured:	Killed: Injured:
NB: Copy/paste this section for each additional species and insert here			

Part 1E – Complete for actions

30. Actions taken to avoid or mitigate any adverse environmental impacts of the incident.		
Action	**Responsible party**	**Completion date** *Actual or intended*
NB: Copy/paste this section for each additional actions and insert here		
31. Corrective actions taken, or proposed, to stop, control or remedy the incident.		
Action	**Responsible party**	**Completion date** *Actual or intended*
NB: Copy/paste this section for each additional actions and insert here		
32. Actions taken, or proposed, to prevent a similar incident occurring in the future.		
Action	**Responsible party**	**Completion date** *Actual or intended*
NB: Copy/paste this section for each additional actions and insert here		

Part 1F – Complete for attachments

33. Are you attaching any documents? *Provide details below.* **Yes ☐ No ☐**

No.	ID	Revision	Date	Title/description

NB: Copy/paste this section for each document and insert here

Part 2 – Information required within 30 days of accident or dangerous occurrence

NOPSEMA acknowledges that in many circumstances an operator may not have completed an investigation within 3 days of an accident or first detection of a dangerous occurrence and agrees that these items must be provided within 30 days unless otherwise agreed, in writing with NOPSEMA.

In circumstances where an investigation has been completed within 3 days, and these items are available (supplemented, as required by any attachments) this part should also be completed at that time.

34. Is there any change to the LTI information provided at section 15 *Provide details below.* **Yes ☐ No ☐**	
Details	
35. Has the investigation been completed? *Provide details below.* **Yes ☐ No ☐**	
Root cause 1	
Root cause 2	
Root cause 3	
Other root causes	
36. Full report. *Describe investigation in detail, including who conducted the investigation and in accordance with what standard/procedure with reference to attachments listed in the 'attachments table' as applicable*	

37. Actions to prevent recurrence of same or similar incident.		
Action	**Responsible party**	**Completion date** *Actual or intended*

NB: Copy/paste this section for each additional actions and insert here

38. Are you attaching any documents? **Yes ☐ No ☐**

If yes, add to Section 1F Complete for Attachments.

References

TOOCS – Type of Occurrence Classification System.

The *Type of Occurrence Classification System, Version 3.0* (TOOCS3.1) was developed to improve the quality and consistency of data. This system aligns with the International Classification of Diseases – Australian Modification (ICD10-AM). Type of occurrence classification system (TOOCS) 3rd Edition May 2008 | Safe Work Australia

Privacy Notice

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Australia's offshore energy regulator

FORM

Monthly Environmental Incident Reports

Document No: N-03300-FM0928 A198750

Date: 12/06/2025

Report for the month is due no later than 15 days after the end of the calendar month.

Send completed form to: submissions@nopsema.gov.au or via secure file transfer at https://securefile.nopsema.gov.au/filedrop/submissions

Reference: Section 50

Final report for this activity: ☐					
Titleholder name:			**Title of environment plan for the activity**		
Activity type: (e.g. drilling, seismic, production)			**Month, Year:**		
Contact person:		**Email:**		**Phone:**	
Incident date	**All material facts and circumstances** (including release volumes to environment if applicable)	**Performance outcome(s) and/or standard(s) breached**	**Action taken to avoid or mitigate any adverse environmental impacts of the incident**	**Corrective action taken, or proposed, to stop, control or remedy this incident**	**Action taken, or proposed, to prevent a similar incident occurring in future**

Note 1: This form may be submitted in conjunction with the 'Operational Activities Monthly Report' Form available at www.nopsema.gov.au

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APPENDIX F STAKEHOLDER CONSULTATION

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Woodside Energy

Appendix F: Browse to NWS Project Geophysical and Geotechnical Surveys Environment Plan (Commonwealth)

October 2026

Revision 0

Document No. BD0006AH1500004593

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1. CONSULTATION APPROACH

Consultation under regulation 25 of the OPGGS(E) Regulations provides that, in the course of preparing an environment plan, 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 on all consultations 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 Browse to NWS Project Geophysical and Geotechnical (GPGT) Surveys (Commonwealth) Environment Plan (EP), Woodside has taken a broad and proactive consultation approach over a period of 5 months, including by:

- allowing a 30-day period for consultation in line with Woodside's methodology
- providing sufficient information adapted to the nature of each relevant person
- engaging in proactive activities to raise awareness of the consultation process and opportunity for relevant persons to provide feedback
- actively inviting participation in the consultation process. This approach was aimed at raising public awareness of the consultation opportunity and to enable self-identification. It included:
  - a social media campaign
  - advertising in national, state, regional and Indigenous newspapers
  - attendance at community events.

The consultation approach is consistent with regulation 25 of the OPGGS(E) Regulations. The approach is proactive, has enabled self-identification and has raised broad awareness of Woodside's activities to be carried out under this EP.

1.1 Woodside's approach to consultation



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Woodside's consultation approach consistent with regulation 25 includes:

- Assessment and identification of relevant persons
- Opportunities for relevant person self-identification through national, state, regional and Indigenous print advertising and regional social media campaign
- Two-way communication through emails, in-person meetings and phone calls
- Follow-up if Woodside considers it is required prior to consultation close
- Sufficient information and a reasonable period of time for consultation (see Section 5 of the EP).

Proactive activities to raise consultation awareness includes:

- Community events and engagement
- Local print advertising
- Website and social media
- Community newsletters
- Community bulletin board posting
- Additional supporting campaigns as needed.

1.2 Proactive consultation

To support broad awareness and understanding of this EP, Woodside provided additional contextual information on the wider Browse Project and the other Browse GPGT Survey EPs during the consultation period which included:

- Additional information regarding the Browse to NWS Project and the role of the 3 Browse Geophysical and Geotechnical (GPGT) survey EPs included in the Consultation Information Sheet
- Broad advertising of the Browse GPGT survey EPs in print and social media (from Broome to Exmouth)
- Proactively contacted organisations including Shire of Broome and Broome Chamber of Commerce and Industry to provide information regarding the EPs prior to the consultation period commencing and held meetings throughout June 2026.
- Promoted the Browse GPGT Survey EPs at the Karratha Community Liaison Group (CLG) meetings in April and July 2026.

This additional contextual information was provided in addition to the provision of sufficient information to relevant persons so that they could make an informed assessment of the possible consequences of the activity on their functions, interests or activities.

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 Browse to NWS Project GPGT Surveys (Commonwealth) 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.

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1.4 NGO consultation approach

Woodside has an established history of consulting with environmental non-government organisations (NGOs) as part of its EP consultation process. In its methodology (Section 5.3.4, Table 5-2 of the EP), 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
- participated in regional community events (which were advertised) in the Pilbara which could be attended by any NGOs including local groups (if NGOs attended these sessions, they did not identify themselves)

1.5 NGO response

Woodside consulted 5 NGOs at its discretion for this EP, with 3 responses being received from the Conservation Council of WA (CCWA), Australian Marine Conservation Society (AMCS), and Greenpeace Australia (GPAP).

Some feedback drew on studies or regulatory decisions relating to conventional marine seismic surveys or concerned the broader Browse to NWS Project. These matters are considered beyond the scope of this EP.

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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 5.3.7 of 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 of the EP), assessment of relevant persons is informed by the EMBA, shown in Figure 2-1.

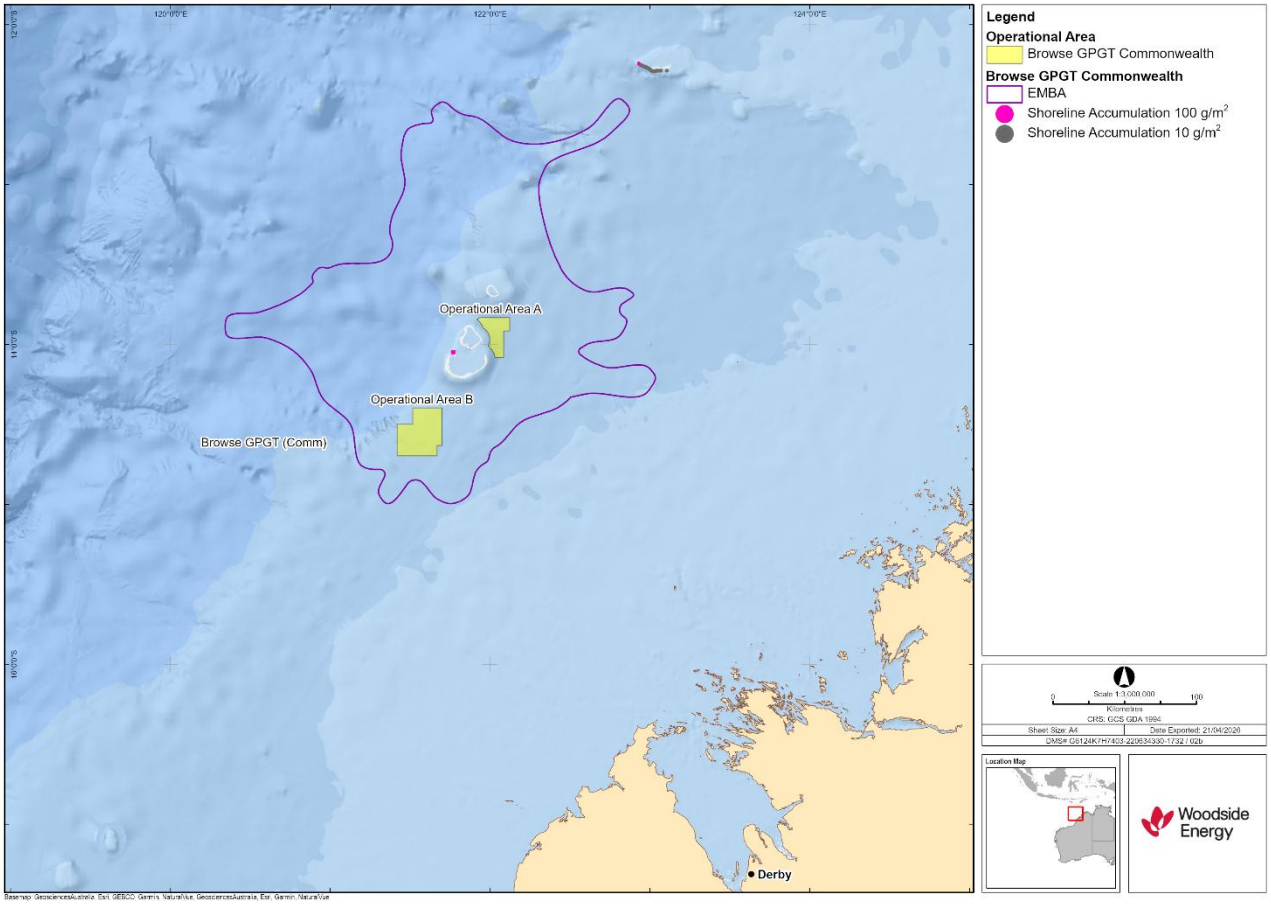


Figure 2-1: Operational Area and EMBA for the Browse to NWS Project GPGT Surveys (Commonwealth) EP

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2.2 Table 1: Assessment of relevance

Government, fisheries, community, titleholders, NGOs, research institutes

Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
Commonwealth and WA State Government Departments or Agencies – Marine			
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 may be relevant to the activity as there may be telecommunications lines that intersect the Operational Area.	Yes
Australian Fisheries Management Authority (AFMA)	Responsible for managing Commonwealth fisheries.	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(a) of the Environment Regulations. The North West Slope Trawl Fishery is active in the Operational Area and EMBA. AFMA's responsibilities may be relevant to the activity as the North West Slope Trawl Fishery is 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
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

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
Australian Maritime Safety Authority (AMSA) – Navigational 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 – Navigational 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 Fishery is active in the Operational Area and EMBA. DAFF – Fisheries responsibilities may be relevant to the activity as the North West Slope Trawl Fishery is 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. DPLH's responsibilities may be relevant to the activity as there is known Maritime Cultural Heritage overlapping the EMBA.	Yes
Department of Primary Industries and Regional Development (DPIRD)	Responsible for managing State fisheries.	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(b) of the Environment Regulations. The Marine Aquarium Fish Managed Fishery and Northern Demersal Scalefish Managed Fishery are active in the Operational Area. The Marine Aquarium Fish Managed Fishery, Northern Demersal Scalefish Managed Fishery, and Mackerel Managed Fishery have been active in the EMBA within the past 5 years. DPIRD's responsibilities may be relevant to the activity as the government department responsible for State fisheries.	Yes
Department of Transport and Major Infrastructure (DTMI)	Legislated responsibility for oil pollution response in State waters.	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(b) of the Environment Regulations. The proposed activity has a hydrocarbon spill risk, which may require DTMI response in	Yes

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
		State waters.	
Kimberley Ports	Responsible for the operation of the Port of Yampi Sound.	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(b) of the Environment Regulations. The EMBA does not overlap Kimberley Ports area of responsibility. Woodside contacted Kimberley Ports at its discretion, in line with Section 5.3.7, following advice from AMSA – Navigational Safety.	No
Western Australian Museum (WAM)	Manages 200 shipwreck sites of the 1,500 known to be located off the Western Australian coast.	Woodside has applied its methodology for 'Historical cultural heritage groups or organisations' under regulation 25(1)(d) of the Environment Regulations. There are known shipwrecks overlapping the EMBA for which the Western Australian Museum may be responsible.	Yes
Commonwealth and WA State Government Departments or Agencies – Environment			
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 Agriculture, Fisheries and Forestry (DAFF) – Biosecurity (marine pests, vessels, aircraft and personnel)	DAFF administers, implements and enforces the Biosecurity Act 2015. DAFF requests to be consulted where an activity has the potential to transfer marine pests. DAFF also has inspection and reporting requirements to ensure that all conveyances (vessels, installations and aircraft) arriving in Australian territory comply with international health regulations and that any biosecurity risk is managed.	Woodside has applied its methodology for 'Government departments / agencies – environment' under regulation 25(1)(a) of the Environment Regulations. DAFF – Biosecurity's responsibilities may be relevant to the proposed activities in the EMBA in the prevention of introduced marine species.	Yes

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
	DAFF requests to be consulted where an activity involves the movement of aircraft or vessels between Australia and offshore petroleum activities either inside or outside Australian territory.		
Department of 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
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
Department of Water Environment Regulation (DWER)	Responsible for management and regulation of WA's environment and water resources.	Woodside has applied its methodology for 'Government departments / agencies – environment' under regulation 25(1)(b) of the Environment Regulations. DWER has not been assessed as relevant for this activity as EPs are regulated under separate petroleum-specific approval frameworks administered by DMPE or NOPSEMA. DWER may be relevant where an activity requires, or has a clear link to, a DWER or EPA-administered approval or statutory function, however no such approval pathway or statutory function is engaged for this activity. Woodside chose to contact DWER at its discretion, in line with Section 5.3.7 of the EP.	No
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
Commonwealth and State Government Departments or Agencies – Industry			
Department of Mines, Petroleum and Exploration (DMPE)	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
Commonwealth commercial fisheries and peak representative bodies			
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. The Southern Bluefin Tuna Fishery overlaps the EMBA. ASBTIA's functions, interests or activities may be relevant to the activity as the Southern	Yes

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		Bluefin Tuna Fishery overlaps the EMBA.	
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 is active in the Operational Area and EMBA. CFA's functions, interests or activities may be relevant to the activity as the North-West Slope Trawl Fishery, Southern Bluefin Tuna Fishery, Western Skipjack Fishery, and Western Tuna and Billfish Fishery overlap 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
Southern Bluefin Tuna 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. Although the fishery overlaps the Operational Area and EMBA, it has not been active in the Operational Area or EMBA within the past 5 years. Woodside does not consider that the proposed activity will present a risk to licence holders, given since 1992, the majority of Australian catch has concentrated in south-eastern Australia. (Patterson et al., 2022). In addition, given fishing methods by licence holders for species fished in this fishery (Australia has a 35% share of total global allowable catch of Southern Bluefin Tuna, which is value-added through tuna ranching near Port Lincoln (South Australia), or fishing effort in New South Wales (Australian Southern Bluefin Tuna Industry Association).	No
Tuna Australia	Represents the interests of the Western Tuna and Billfish 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 Western Tuna and Billfish Fishery and Western Skipjack Fishery overlap the EMBA. Tuna Australia's functions, interests or activities may be relevant to the activity as the Western Tuna and Billfish Fishery and Western Skipjack Fishery overlap the EMBA.	Yes
Western Skipjack 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.	No

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		Although the fishery overlaps the Operational Area and EMBA, it has not been active in the Operational Area or EMBA within the past 5 years. Woodside does not consider that the activity will present a risk to licence holders, given the fishery spans the Australian Fishing Zone west of Victoria and the Torres Strait. The Fishery is not currently active and no fishing has occurred since 2009 (Patterson et al., 2022). In addition, interactions are not expected given the species' pelagic distribution fishing methods for species fished by licence holders.	
Western Tuna and Billfish 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. Although the fishery overlaps the Operational Area and EMBA, it has not been active in the Operational Area or EMBA within the past 5 years.	No
State commercial fisheries and peak representative bodies			
Aquaculture Council of Western Australia (ACWA)	State peak body for WA's aquaculture industry.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. There are no ACWA members active in the EMBA.	No
Western Australian Fishing Industry Council (WAFIC)	Represents the interests of commercial fishers with licences in State waters.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. The Marine Aquarium Fish Managed Fishery and Northern Demersal Scalefish Managed Fishery are active in the Operational Area. The Marine Aquarium Fish Managed Fishery, Northern Demersal Scalefish Managed Fishery, and Mackerel Managed Fishery have been active in the EMBA within the past 5 years. WAFIC's functions may be relevant to the activity as the peak representative body for State fisheries. Under an agreement WAFIC issued consultation materials to relevant commercial fisheries licence holders. 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.	Yes

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		As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would be undertaken only in the event of an unplanned emergency scenario.	
Mackerel Managed Fishery (Area 1 and 2)	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. Although the fishery overlaps the Operational Area, it has not been active in the Operational Area within the past 5 years. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years. 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
Marine Aquarium 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 overlaps the Operational Area and EMBA and has been active in the Operational Area and EMBA within the past 5 years. Woodside acknowledges WAFIC's consultation guidance and has applied this by consulting fisheries that are assessed as having a potential for interaction in the Operational Area via WAFIC.	Yes
Northern Demersal Scalefish 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. Woodside acknowledges WAFIC's consultation guidance and has applied this by consulting fisheries that are assessed as having a potential for interaction in the Operational Area via WAFIC.	Yes
Pearl Oyster 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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		The fishery does not overlap the Operational Area but overlaps the EMBA. The fishery has not been active in the Operational Area or EMBA within the past 5 years.	
Pearl Producers Association (PPA)	Peak representative organisation of The Australian South Sea Pearling Industry, with members in Western Australia and the Northern Territory.	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 Pearl Oyster Managed Fishery has been assessed as not relevant to the proposed activity. As the peak representative body for the Pearl Oyster Managed Fishery, the PPA has also been assessed as not relevant.	No
Recreational marine users and peak representative bodies			
Marine Tourism WA	Represents the interests of marine tourism in WA.	Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 25(1)(d) of the Environment Regulations. Activities have the potential to impact recreational fishers' functions, interests or activities due to the location offshore and there has been recorded charter effort in the EMBA in the past 5 years.	Yes
Pilbara/Kimberley Recreational Marine Users	Pilbara/Kimberley-based dive, tourism and charter operators.	Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 25(1)(d) of the Environment Regulations. AdCru Assets Pty Ltd, AOA International Pty Ltd, Australian Port and Marine Services Pty Ltd, Bloor Street Investments Pty Ltd, Bondall Pty Ltd, Brefjen Nominees Pty Ltd, Broome Chiropractic Pty Ltd, Capricorn Mist Pty Ltd, Chapel Nominees Pty Ltd, Charter Express Pty Ltd, Cm Marine Pty Ltd, Cm Ventures Pty Ltd, Coastway Investments Pty Ltd, Compagnie Du Ponant Pty Ltd, Coral Princess Cruises (NQ) Pty Ltd, Discovery Holiday Parks Pty Limited, Diversity Charter Company WA Pty Ltd, Eco Wharf Pty Ltd, Eco-Abrolhos Pty Ltd, Fawesome Expeditions Pty Ltd, Go Beyond Broome 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, Kimberly Pearl Tours Pty Ltd, King Sound Resort Hotel Pty Ltd, KW Marine Pty Ltd, L & S Family Holdings Pty Ltd, Lake Argyle Cruises Pty Ltd, Lombadina Aboriginal Corporation, Lulamanzi Investments Pty Ltd, Mackerel Islands Pty Ltd, , Marbil WA 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, Pearl Expeditions Pty Ltd, Sea 2 Pty Ltd, Sealife Charters Pty Ltd, Silverado Charters Pty Ltd, Split Tide Pty Ltd, Super Yachts Perth Pty Ltd, The Great Escape Charter Company Pty Ltd, Western Wave Marine Pty Ltd, Willie Creek Pearl Farm Pty Ltd, Wongs Way Out Pty Ltd, Archipelago Adventures, Broome Tours Pty Ltd, Hampton Harbour Boat & Sailing Club, Mackerel Islands Pty Ltd, Marine Rescue	Yes

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		Dampier, Nickol Bay Sport Fishing Club, Port Walcott Volunteer Marine Rescue, Port Walcott Yacht Club. The above list of businesses is in addition to individuals as per SI Report A, reference 9.1). 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.	
Recfishwest	Represents the interests of recreational fishers in WA.	Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 25(1)(d) of the Environment Regulations. Activities have the potential to impact recreational fishers' functions, interests or activities due to the location offshore and there has been recorded charter effort in the EMBA in the past 5 years.	Yes
WA Game Fishing Association	Represents the interests of game fishers in WA.	Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 25(1)(d) of the Environment Regulations. Activities have the potential to impact game fishers' functions, interests or activities due to the location offshore and there has been recorded charter effort in the EMBA in the past 5 years.	Yes
Titleholders and Operators			
INPEX	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 area/s overlap/s the EMBA.	Yes
Origin Energy Browse	Titleholder or Operator.	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit area/s overlap/s the EMBA.	Yes
PetroChina International Investment (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 area/s overlap/s the EMBA.	Yes
Santos Offshore / Santos Browse	Titleholder or Operator.	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit area/s overlap/s the EMBA.	Yes

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Peak Industry Representative bodies			
Australian Energy Producers (AEP)	Represents the interests of oil and gas explorers and producers in Australia.	Woodside has applied its methodology for 'Peak Industry Representative bodies' under regulation 25(1)(d) of the Environment Regulations. AEP's responsibilities are identified as having an intersect with Woodside's planned activities in the EMBA.	Yes
Local government and elected Parliamentary representatives, community groups or organisations			
Broome 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 Broome and surrounding areas.	Woodside has applied its methodology for 'Local government and community groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Broome Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes
Shire of Broome	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Mile, Bilingurr, Broome, Cable Beach, Cape Leveque, Coconut Well, Djugun, Lombadina, Minyirr, Morell Park, Skuthorpe	Woodside has applied its methodology for 'Local government and community groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Broome's area of responsibility overlaps the EMBA.	Yes
Other non-government groups or organisations (NGOs) or individuals			
Australian Conservation Foundation (ACF)	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 ACF's relevance for the proposed activity. Woodside has assessed that ACF has publicly available statements, campaigns or initiatives relating to broader environmental and energy policy matters. Woodside chose to contact ACF at its discretion in line with Section 5.3.7 to provide an opportunity to engage with ACF to assist to identify whether its functions, interests or activities may be affected by the planned activities.	No
Australian Marine Conservation Society (AMCS)	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 AMCS's relevance for the proposed activity. Woodside has assessed that AMCS has provided feedback and/or has a publicly available statement (or purpose), website or social media material that demonstrates that	Yes

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		its functions, interests or activities may be affected by the planned activities in accordance with the intended outcome of consultation (as set out in Section 5.3.4 of the EP).	
Conservation Council of Western Australia (CCWA)	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 CCWA's relevance for the proposed activity. Woodside has assessed that CCWA has provided feedback and/or has a publicly available statement (or purpose), website or social media material that demonstrates that its functions, interests or activities may be affected by the planned activities in accordance with the intended outcome of consultation (as set out in Section 5.3.4 of the EP).	Yes
Greenpeace Australia Pacific (GPAP)	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 GPAP's relevance for the proposed activity. Woodside has assessed that GPAP has provided feedback and/or has a publicly available statement (or purpose), website or social media material that demonstrates that its functions, interests or activities may be affected by the planned activities in accordance with the intended outcome of consultation (as set out in Section 5.3.4 of the EP).	Yes
Environs Kimberley	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 Environs Kimberley's relevance for the proposed activity. Woodside has assessed that Environs Kimberley has publicly available statements, campaigns or initiatives relating to broader environmental and energy policy matters. Woodside chose to contact Environs Kimberley at its discretion in line with Section 5.3.7 to provide an opportunity to engage with Environs Kimberley to assist to identify whether its functions, interests or activities may be affected by the planned activities.	No
Vocus	Non-government organisation.	Woodside has applied its methodology for 'Other non-government groups or organisations' under regulation 25(1)(d) of the Environment Regulations to determine Vocus' relevance for the proposed activity. There are known Vocus communication cables that intersect within the Operational Area.	Yes
Research institutes and local conservation groups or organisations			
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.	No

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		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.	
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 may be research being undertaken by CSIRO that intersects within the EMBA. Woodside chose to contact CSIRO at its discretion in line with Section 5.3.7 of the EP.	No
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 may be research being undertaken by 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
Curtin University	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 Curtin University that intersects within the EMBA. Woodside chose to contact Curtin University at its discretion in line with Section 5.3.7 of the EP.	No
Edith Cowan University (ECU)	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 ECU that intersects within the EMBA. Woodside chose to contact ECU at its discretion in line with Section 5.3.7 of the EP.	No
Murdoch University	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 Murdoch University that intersects within the EMBA. Woodside chose to contact Murdoch University at its discretion in line with Section 5.3.7 of the EP.	No
University of Western Australia (UWA)	Research institute.	Woodside has applied its methodology for 'Research institutes and local conservation groups or organisations' under regulation 25(1)(d) of the Environment Regulations. There may be research being undertaken by UWA that intersects within the EMBA. Woodside chose to contact UWA at its discretion in line with Section 5.3.7 of the EP.	No

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Traditional custodians and nominated representative corporations

Traditional Custodians and nominated representative corporations			
Bardi and Jawi Niimidiman Aboriginal Corporation RNTBC (BJNAC)	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 Bardi and Jawi Native Title Determination for which BJNAC is the Registered Native Title Body Corporate, does not overlap the EMBA. The claim is coastally adjacent to the EMBA. BJNAC is also party to the Bardi Jawi Conservation Estate Indigenous Land Use Agreement which is coastally adjacent to the EMBA.	Yes
Boorroola Moorrool Moorrool	Traditional custodians	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. The Boorroola Moorrool Moorrool Native Title Claim application is coastally adjacent to the EMBA.	Yes
Dambimangari Aboriginal Corporation (DAC)	Representative Aboriginal Corporation.	Woodside has applied its methodology for 'Traditional Custodians' under regulation 25(1)(d) of the Environment Regulations. DAC is party to the Dambimangari Country Marine Park Indigenous Land Use Agreement, Dambimangari KSCS Marine Parks ILUA, KTS Co-Existence ILUA, Reserve 30674 ILUA, State KTS ILUA and The Cockatoo Island Co-Existence Indigenous Land Use Agreement which are coastally adjacent to the EMBA.	Yes
Gogolanyngor Aboriginal Corporation RNTBC (GAC)	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 Jabirr Jabirr/Ngumbarl Native Title Claim, for which GAC is the Registered Native Title Body Corporate, does not overlap and is not coastally adjacent to the EMBA. Woodside chose to consult GAC at its discretion.	No
Joombarn-buru Aboriginal Corporation (Joombarn-buru)	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 Joombarn-buru Native Title Claim for which Joombarn-buru is the Registered Native Title Body Corporate, does not overlap and is not coastally adjacent to the EMBA. Woodside does not consider Joombarn-buru to be relevant for this EP.	No

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La-Djarda Bay Aboriginal Corporation (La-Djarda Bay)	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. La-Djarda Bay originated from a separation from Nimanburr Aboriginal Corporation. Woodside chose to consult La-Djarda Bay at its discretion.	No
Mayala Inninalang Aboriginal Corporation RNTBC (MIAC)	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 Mayala People, and Mayala #2 Native Title Claims, for which MIAC is the Registered Native Title Body Corporate, do not overlap the EMBA. The claims are coastally adjacent to the EMBA. MIAC is also party to the Kimberley Barramundi Expansion Project ILUA and Mayala Country Marine Park Indigenous Land Use Agreement which are coastally adjacent to the EMBA.	Yes
Nimanburr Aboriginal Corporation RNTBC (Nimanburr)	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. The Bindunbur Native Title Claim, for which the Gogolanyngor Aboriginal Corporation, Nimanburr and Nyul Nyul PBC Aboriginal Corporation are the Registered Native Title Body Corporates, does not overlap, and is not coastally adjacent to the EMBA. Woodside chose to consult Nimanburr at its discretion.	No
Nyul Nyul PBC Aboriginal Corporation RMTBC (NNAC)	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. The Bindunbur Native Title Claim, for which the Gogolanyngor Aboriginal Corporation, Nimanburr and Nyul Nyul are the Registered Native Title Body Corporates, does not overlap, and is not coastally adjacent to the EMBA. Woodside chose to consult NNAC under its discretion.	No
Walalakoo Aboriginal Corporation RNTBC (WAC)	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 Nyikina Mangala, Nyikina Mangala #2 and Booroola Moorrool Moorrool Part A Native Title Claims for which WAC is the registered Native Title Body Corporate, does not overlap and is not coastally adjacent to the EMBA. WAC has self-identified as a relevant person for oil and gas projects in the Browse Basin.	Yes
Wunambal Gaambera Aboriginal Corporation (WGAC)	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations.	No

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		Woodside chose to consult WGAC under its discretion.	
Wanjina-Wunggurr (Native Title) Aboriginal Corporation (WWAC)	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. The Dambimangari, Uunguu Part A, and Wanjina - Wunggurr Wilinggin Native Title Determination No 1 Native Title Claims for which WWAC is the Registered Native Title Body Corporate, do not overlap the EMBA. The claims are coastally adjacent to the EMBA. WWAC is also party to the Dambimangari Country Marine Park Indigenous Land Use Agreement, Dambimangari KSCS Marine Parks ILUA, KTS Co-Existence ILUA, Reserve 30674 ILU, State KTS ILUA, The Cockatoo Island Co-Existence Indigenous Land Use Agreement, and Wilinggin Indigenous Land Use Agreement which are coastally adjacent to the EMBA.	Yes
Warrwa Combined	Traditional Custodians	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. The Warrwa Combined Native Title claim is coastally adjacent to the EMBA.	Yes
Wilinggin Aboriginal Corporation (Wilinggin)	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. Wilinggin is party to the Wilinggin Indigenous Land Use Agreement which is coastally adjacent to the EMBA.	Yes
Yawuru Native Title Holders Aboriginal Corporation RNTBC (Yawuru)	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. The Rubibi Community Native Title Claim, for which the Yawuru Native Title Holders Aboriginal Corporation is the Registered Native Title Body Corporate does not overlap and is not adjacent to the EMBA. Yawuru's functions, interests or activities may be affected by Woodside's proposed planned or unplanned activities to be carried out under the EP.	No
Native Title Representative Bodies			
Kimberley Land Council (KLC)	Native Title Representative Body	Woodside has applied its methodology for 'Native Title Representative Bodies' under regulation 25(1)(d) of the Environment Regulations. 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.	Yes

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		KLC's functions may be relevant to the proposed activity in relation to its facilitation and coordination function as a Native Title Representative Body under applicable federal legislation.	
Northern Land Council (NLC)	Native Title Representative Body	Woodside has applied its methodology for 'Native Title Representative Bodies' under regulation 25(1)(d) of the Environment Regulations. NLC is the Native Title Representative Body for the Northern Territory. As such, they are not a Prescribed or Registered Native Title Body Corporate but exist to assist native title claimants and holders. NLC's functions may be relevant to the proposed activity in relation to its facilitation and coordination function as a Native Title Representative Body under applicable federal legislation.	Yes
Other Indigenous Groups			
Indigenous Salt Water Advisory Group (ISWAG)	Traditional Owner Representative Body	Woodside has applied its methodology for 'Traditional Custodians and nominated representative corporations' and 'Other non-government groups or organisations' under regulation 25(1)(d) of the Environment Regulations. ISWAG is comprised of nine Kimberley Traditional Owner Groups. Woodside chose to consult ISWAG at its discretion	No
Lombadina Aboriginal Corporation (Lombadina)	Indigenous recreational marine user	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. Lombadina is a registered Aboriginal Corporation located on the Dampier Peninsula. It is not a Registered Native Title Body Corporate. Lombadina is also a Kimberley recreational marine user.	Yes

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3. CONSULTATION ACTIVITIES

Woodside has been conducting consultation with relevant persons and other parties for the Browse to NWS Project GPGT Surveys (Commonwealth) EP since April 2026 when consultation commenced as part of a planned, integrated and consistent approach for Woodside's proposed opportunities.

3.1 Discharging Regulation 25 of the Environment Regulations

Consultation for the Browse to NWS Project GPGT Surveys (Commonwealth) EP began with public notification via newspaper and social media advertising and direct engagement with identified relevant persons and other persons and organisations Woodside chose to contact.

This approach has a number of aims, including, where relevant to be inclusive, transparent, voluntary, respectful and two-way. Consultation was undertaken, where relevant, by email, letter, phone call and/or meetings and through advertising. Further details on these activities are provided in the following sections.

3.1.1 Newspaper advertising

Woodside advertised the EP consultation with an overview of planned activities in national, state regional and Indigenous newspapers as per the table below (also see Record of Consultation, reference 6.3) to reach relevant communities within or adjacent to the EMBA.

No direct comments or feedback were received from the advertisements.

Newspaper	Coverage	Readership	Publication dates
1. The Australian	National	Weekly – 453,000	28 April 2026
2. The West Australian	Regional (WA)	Daily – 364,000	28 April 2026
3. National Indigenous Times	Indigenous	Monthly – 1,484,340	28 April 2026
4. Pilbara News	Local (WA)	Weekly – 17,611	29 April 2026
5. Kimberley Echo	Local (WA)	Weekly – 480	30 April 2026
6. Broome Advertiser	Local (WA)	Weekly – 14,474	30 April 2026
7. Koori Mail	Indigenous	Monthly – 80,000	6 May 2026

3.1.2 Direct consultation

Woodside provided a Consultation Information Sheet to relevant persons and to other persons and organisations it chose to contact, during the initial consultation period. See Section 5.3.4 and Section 5.3.7 of the EP.

The Consultation Information Sheet included an overview of the activity, maps, a summary of key risks and/or impacts and associated management measures (Record of Consultation, reference 6.1.1). It also outlined the timeframe for providing feedback and included Woodside's toll-free phone number (1800 442 977) and the consultation email address feedback@woodside.com to support consultation.

As part of the EP's initial consultation, Woodside provided additional targeted information to specific relevant persons, as necessary. This information included:

- GIS shape files
- defence zone map (Record of Consultation, reference 6.1.3)
- vessel density map (Record of Consultation, reference 6.1.4)

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- shipwreck information (Record of Consultation, reference 6.1.5)
- submarine communication cable map (Record of Consultation, reference 6.1.6)

Where appropriate, Woodside conducted phone calls and meetings with relevant persons.

Where appropriate, follow-up emails or letters were sent to relevant persons who had not responded prior to the close of the advertised 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 of the EP).

Consultation activities undertaken with relevant persons are summarised at Appendix F, Table 2.

Engagement with persons or organisations Woodside assessed as not relevant but chose to contact (see Section 5.3.7 of the EP) or self-identified and Woodside assessed as not relevant are summarised at Appendix F, Table 3.

3.1.3 Website and social media

Since the commencement of the initial consultation period (April 2026), the Consultation Information Sheet has been available on Woodside's website. The website also includes alternative methods for relevant persons to provide feedback to Woodside and information on other Woodside activities. From April 2026, Woodside ran a geotargeted paid social media campaign (Record of Consultation, reference 6.4) covering various local government authorities within, or coastally adjacent to, the EMBA for the proposed activities. The campaign focused on persons whose functions, interests or activities might be affected by the EP's activities and directed them to Woodside's Consultation Activities page so that, if they wanted further information, they could learn more about the EP and proposed activities.

Below is a summary of the reach and impact of the social campaign.

Platforms	Geotargeted reach	Post dates	Impact
Meta – Facebook and Instagram	Karratha, Dampier, Onslow, Roebourne, Exmouth, Broome, Derby, Wyndham	29/04/2026 12/05/2026 25/05/2026	Reach: 98,624 Impressions: 191,177 Link Clicks: 735 Click Through Rate: 0.38%

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
Meta – Facebook and Instagram	51 👍 1 ❤️ 3 shares	14 comments	0 relevant

3.2 Supporting proactive consultation

3.2.1 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 6.5). Woodside published advertisements ahead of these sessions and events in relevant local newspapers and on social media to support attendance.

Date	Location	Event (if applicable)
15 May 2026	Karratha	KDCCI Markets at REAF

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Date	Location	Event (if applicable)
7 June 2026	Dampier	Dampier Beachside Markets
6 July 2026	Roebourne	Waramalgu Markets with Cora-Larni Enterprises
1 – 2 August 2026	Karratha	FeNaCING Festival
8 August 2026	Onslow	Passion of the Pilbara

3.2.2 Newsletters

Woodside's EP focussed newsletter *Let's Talk* is designed to reach existing and potentially relevant persons, supports self-identification and provides information about Woodside's EP-related activities. The newsletter provides updates about EP consultation activities, case studies on effective consultation with relevant persons and other EP related information such as upcoming events where the Woodside team will consult with the local community. *Let's Talk* was published in May during the consultation period and was distributed in a variety of locations including Karratha, Roebourne, Exmouth and Perth as well as across digital platforms including Woodside's website and social media channels. People can also subscribe to receive *Let's Talk* on Woodside's website. (Record of Consultation, reference 6.8.1).

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 on EPs. The March, June and September 2026 issues were published during and around the timeframe of the consultation period (Record of Consultation, reference 6.8.2).

3.3 Traditional Custodian specific consultation

In addition to the approaches outlined 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 5.5.4 of 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 6.1.1 and reference 6.1.2). 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.

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 Indigenous Affairs 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

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- encouraging Traditional Custodian attendees to control the pace of the meeting and pause at any time to ask questions, seek clarification or provide feedback
- visual aids such as posters, presentations, maps, 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, 6.1.1) and Summary Consultation Information Sheets (Record of Consultation, reference 6.1.2) are available face-to-face consultation
- meeting costs such as sitting fees, travel and executive support and other support required
- advertising in Indigenous publications such as the National Indigenous Times (28 April 2026) and Koori Mail (6 May 2026) (Record of Consultation, reference 6.3.3 and reference 6.3.7).

Newspaper	Coverage	Publication dates
Koori Mail	Indigenous	6 May 2026
National Indigenous Times	Indigenous	28 April 2026

Woodside also ran a geotargeted sponsored social media campaign (Record of Consultation, reference 6.4.1) 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 outlined in 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, activities or interests, 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.

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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 issue.

4.1 Commonwealth and WA State Government departments or agencies – marine

4.1.1 Australian Border Force (ABF)

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, 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 '*Consultation on offshore petroleum environment plans: Information for the community'*.
- On 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional measures are required. Woodside has addressed maritime security-related issues in Section 7 of the EP based on previous offshore activities.

Summary Report – Consultation Complete

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:

Sufficient Information

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:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since April 2026. Woodside gave this information to ABF on 28 April 2026, marking the commencement of consultation on this EP. The Consultation Information Sheet included:

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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 Petroleum Activities Program, 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 ABF a reasonable period for consultation in the preparation of the 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 and Woodside allowed ABF 30 days for consultation.
- Consultation for this EP commenced 5 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 a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, 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 Communications and Media Authority (ACMA)

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed ACMA 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 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional measures are required. Communications infrastructure located in the vicinity of the Operational Area/s is set out in Section 4.10.6 of the EP.

Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with ACMA 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 ACMA sufficient information to allow ACMA 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 April 2026. Woodside gave this information to ACMA on 28 April 2026, 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 Petroleum Activities Program, 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).

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Reasonable Period

Woodside allowed ACMA a reasonable period for consultation in the preparation of the EP because:

- A consultation period was stated in the initial correspondence to ACMA 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 and Woodside allowed ACMA 30 days for consultation.
- Consultation for this EP commenced 5 months ago.
- In this context, Woodside allowed ACMA 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 ACMA is appropriate and adapted to the nature of interests of ACMA:

- 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 a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, reminding ACMA 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 ACMA 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 ACMA's functions, interests or activities.

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4.1.3 Australian Fisheries Management Authority (AFMA)

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed AFMA advising of the proposed activity (Record of Consultation, reference 6.1.11), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans: Information for the community*'.
- On 11 May 2026, AFMA emailed thanking Woodside for the email. AFMA raised items **(1)** to **(3)** (SI Report A, reference 1.1).
- On 15 May 2026, Woodside responded thanking AFMA for its email. Woodside responded to **(1)** to **(3)** (SI Report A, reference 1.2).
- On 15 June 2026, Woodside sought AFMA's advice on the nature and extent of traditional Indonesian fishing activity within the Australia–Indonesia Memorandum of Understanding (MoU) box, particularly near Scott Reef, to inform its understanding of potential interactions with proposed survey activities (SI Report A, reference 1.3).
- On 19 June 2026, AFMA responded to Woodside thanking it for seeking advice from AFMA. AFMA responded to Woodside's queries with items **(4)** and **(5)** (SI Report A, reference 1.4).
- On 9 July 2026, Woodside replied to AFMA thanking it for providing guidance on this matter. Woodside responded to items **(4)** and **(5)** (SI Report A, reference 1.5).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
(1) AFMA confirmed it had no direct comments to the EP.	**(1)** Woodside notes AFMA had no comments on this EP.	**(1)** Woodside thanked AFMA for its reply and for confirming it had no direct comments on the EP.	**(1)** No changes or additional measures are required.
(2) AFMA requested to be included in future consultation on this matter.	**(2)** Woodside understands that AFMA would like to be informed of future consultation opportunities and has committed to notifying AFMA prior to the commencement of activities.	**(2)** Woodside confirmed it would include AFMA in future consultation for the EP.	**(2)** No changes or additional measures are required. As per Woodside's standard notifications, AFMA will be notified 10 days prior to the commencement of activities and following completion of activities, as referenced as PS 1.5 and set out in Section 7.10 of the EP.
(3) AFMA recommended that Woodside consult with specific Commonwealth fishery stakeholders.	**(3)** Woodside notes AFMA's advice that CFA, Tuna Australia, and ASBTIA should be included in consultation for this EP and Woodside provided	**(3)** Woodside confirmed that consultation materials were provided to CFA, Tuna Australia, and ASBTIA.	**(3)** No changes or additional measures are required. Woodside provided consultation information to CFA, Tuna Australia, and

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	consultation to these organisations for this EP.		ASBTIA, as evidenced in Table 2 of Appendix F in this EP.
(4) In response to a query from Woodside on the nature and extent of traditional Indonesian fishing activity within the Australia–Indonesia Memorandum of Understanding (MoU) box, AFMA clarified that traditional Indonesian fishers may operate within the MoU Box, but noted that AFMA does not license, regulate, or maintain contact details for these fishers.	**(4)** Woodside understands that the MoU box may contain numerous traditional fishers operating and that AFMA does not directly license or regulate the traditional fishers	**(4)** Woodside thanked AFMA for providing guidance and clarifying its role in licencing or regulating traditional fishing.	**(4)** No changes or additional measures are required. Section 6.8.1 of the EP includes controls which address the potential interactions with traditional Indonesian fishers.
(5) In response to a query from Woodside on the nature and extent of traditional Indonesian fishing activity within the Australia–Indonesia Memorandum of Understanding (MoU) box, AFMA recommended contacting the Department of Foreign Affairs and Trade (DFAT) to provide guidance on this matter.	**(5)** Woodside accepts AFMA's advice that DFAT is an appropriate consultation pathway in relation to Indonesian fishers operating within the MoU Box and has addressed this advice by consulting DFAT.	**(5)** Woodside thanked AFMA for providing DFAT contact details and confirmed, in line with AFMA guidance, that consultation information had been provided to DFAT.	**(5)** No changes or additional measures are required. Woodside provided consultation information to DFAT, as evidenced in Table 2 of Appendix F 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, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.8.1 of the EP).	No changes or additional measures are required. Woodside has assessed the potential for interaction with Commonwealth managed fisheries in Section 4.10.1 of the EP.

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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 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:

Sufficient Information

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:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since April 2026. Woodside gave this information to AFMA on 28 April 2026, 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 Petroleum Activities Program, 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).
- On 11 May 2026, AFMA shared its feedback, claims or objections regarding this activity, indicating the information provided was sufficient to enable AFMA to make an informed assessment of the possible consequences of the activity on its functions, interests or activities.

Reasonable Period

Woodside allowed AFMA a reasonable period for consultation in the preparation of the 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 and Woodside allowed AFMA 30 days for consultation.
- Consultation for this EP commenced 5 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:

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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 a targeted social media campaigns (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.

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:

- AFMA 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(b) and 34(g), Woodside has:
  - Responded to feedback from AFMA.
  - Made no changes or inclusions to the EP as a result of consultation with AFMA 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.

4.1.4 Australian Hydrographic Office (AHO)

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed AHO advising of the proposed activity (Record of Consultation, reference 6.1.10), provided a Consultation Information Sheet, a link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans: Information for the community*', and a vessel density map.
- On 29 April, AHO thanked Woodside for the invitation to comment on the EP. AHO raised items **(1)** and **(2)** (SI Report A, reference 2.1).
- On 1 May 2026, Woodside thanked AHO for its email. Woodside responded to items **(1)** and **(2)** (SI Report A, reference 2.2).
- On 3 June 2026, Woodside sent an update to AHO regarding an update on a separate EP (SI Report A, reference 2.3 and 2.4).
- On 4 June 2026, AHO thanked Woodside for the invitation to comment on the EP. AHO re-raised items **(1)** and **(2)** (SI Report A, reference 2.5).
- On 15 July 2026, Woodside thanked AHO for its email. Woodside responded to items **(1)** and **(2)** (SI Report A, reference 2.6).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
(1) No concerns with the activities.	**(1)** Woodside understands that AHO has no concerns regarding the activities.	**(1)** Woodside noted that AHO had no concerns and thanked AHO for its feedback.	**(1)** No changes or additional measures are required.
(2)	**(2)**	**(2)**	**(2)**

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No further updates are required until activity beginning.	Woodside will notify AHO prior to activity commencement.	Woodside confirmed it would notify AHO prior to the commencement of the activities. Woodside further confirmed that, as agreed in correspondence not related to this EP, Woodside will provide AHO with Start of Activity notifications no less than four weeks prior to the commencement of the first activity under the EP, and then subsequently when vessels are undertaking activities within the Operational Area for more than three weeks at a time.	No changes or additional measures are required. Woodside will notify AHO as referenced as PS 1.3 and set out in Section 7.10 of the 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, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.8.1 of the EP).	No changes or additional measures are required.

Summary Report – Consultation Complete

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:

Sufficient Information

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:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since April 2026. Woodside gave this information to AHO on 28 April 2026, 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 Petroleum Activities Program, and proposed mitigation and management measures.
  - A timeframe for consultation and the provision of feedback.

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  - 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).
- In addition to the Consultation Information Sheet, Woodside provided AHO with information tailored to AHO by providing a vessel density map in relation to the activity.
- On 29 April 2026 and 4 June 2026, 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.

Reasonable Period

Woodside allowed AHO a reasonable period for consultation in the preparation of the EP because:

- 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 and Woodside allowed AHO 30 days for consultation.
- Consultation for this EP commenced 5 months ago.
- In this context, Woodside allowed AHO 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 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 a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.

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(b) and 34(g), Woodside has:
  - Responded to feedback from AHO.
  - Made no changes or inclusions to the EP as a result of consultation with AHO 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.

4.1.5 Australian Maritime Safety Authority (AMSA) – Marine Pollution

Summary of information provided and record of consultation for this EP:

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- On 28 April 2026, 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 '*Consultation on offshore petroleum environment plans: Information for the community*'.
- On 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional measures are required. Woodside has addressed oil pollution planning and response at Appendix H.

Summary Report – Consultation Complete

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:

Sufficient Information

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:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since April 2026. Woodside gave this information to AMSA – Marine Pollution on 28 April 2026, 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 Petroleum Activities Program, 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 AMSA – Marine Pollution a reasonable period for consultation in the preparation of the EP because:

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- 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 and Woodside allowed AMSA – Marine Pollution 30 days for consultation.
- Consultation for this EP commenced 5 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 a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, 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.

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4.1.6 Australian Maritime Safety Authority (AMSA) – Navigation Safety

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed AMSA – Navigation Safety advising of the proposed activity (Record of Consultation, reference 6.1.10), provided a Consultation Information Sheet, a link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans: Information for the community',* and a vessel density map.
- On 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).
- On 3 June 2026, AMSA – Navigation Safety thanked Woodside for consulting with them (SI Report A, reference 3.1). AMSA – Navigation Safety raised items **(1)** – **(10).**
- On 26 August 2026, Woodside thanked AMSA – Navigation Safety for its email (SI Report A, reference 3.2). Woodside responded to items **(1)** – **(10)**.

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
(1) Raised vessel traffic crossing through Operational Area B, highlighting periodic bulk carrier and tanker traffic, including vessels transiting south of Scott Reef and through the south-eastern portion of Operational Area B.	**(1)** Woodside notes the vessel traffic information provided by AMSA. This information has been considered in the assessment of navigational risks associated with the activity.	**(1)** Woodside noted AMSA's advice regarding vessel traffic transiting Operational Area B and appreciates the vessel traffic information provided and will consider this information in its assessment of navigational risks and the appropriateness of proposed risk controls.	**(1)** No changes or additional measures are required. Potential interactions with third-party vessels and the selection of navigational controls are assessed in Section 6.8.1 of the EP
(2) Acknowledged Woodside's proposed controls for managing navigational risks.	**(2)** Woodside notes AMSA's acknowledgement of the proposed navigational controls.	**(2)** Woodside noted AMSA's acknowledgement of the proposed control measures to mitigate potential navigational risks associated with the Petroleum Activity.	**(2)** No changes or additional measures are required.
(3) Recommended Woodside evaluate and implement adequate anti-collision measures when planning and conducting the activity.	**(3)** Woodside acknowledges that potential vessel interactions should be considered when selecting navigational controls and has evaluated AMSA's recommendations against the nature, location and navigational risk profile of the proposed activities.	**(3)** Woodside thanked AMSA for its recommendations regarding anti-collision measures and confirmed that each recommendation would be considered as part of the evaluation of controls in the EP to manage vessel interaction risks.	**(3)** No changes or additional measures are required. Potential interactions with third-party vessels and the selection of navigational controls are assessed in Section 6.8.1 of the EP.

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(4) Recommended Woodside consider additional warnings and/or lights to attract the attention of other marine users during the Petroleum Activity.	**(4)** Woodside considers that vessel visibility and warning requirements are appropriately addressed through compliance with applicable navigational safety requirements, including requirements for navigation lights, shapes and signals appropriate to the nature of the operations.	**(4)** Woodside noted AMSA's recommendation regarding additional warnings and lights and confirmed that it would be considered in the evaluation of navigational risk controls. Woodside further confirmed that compliance with the International Regulations for Preventing Collisions at Sea is mandated aboard Woodside-chartered vessels.	**(4)** No changes or additional measures are required. Potential interactions with third-party vessels and the selection of navigational controls are assessed in Section 6.8.1 of the EP
(5) Recommended that all project vessels be fitted with Automatic Identification System (AIS).	**(5)** Woodside considers that AIS requirements are appropriately addressed through compliance with the navigational requirements applicable to each vessel's size, type and class, including the correct setting of vessel navigational status.	**(5)** Woodside noted AMSA's recommendation regarding AIS and confirmed that compliance with applicable navigational requirements is mandated aboard Woodside-chartered vessels, including ensuring that vessel navigational status is correctly set in the AIS.	**(5)** No changes or additional measures are required. The consideration and selection of controls for interactions with third-party vessels are addressed in Section 6.8.1 of the EP.
(6) Recommended that Woodside consider offshore guard vessels to monitor marine traffic and provide early warning to vessels approaching the area of operations.	**(6)** Woodside considers that the adopted navigational controls are proportionate to the short-duration and localised nature of the proposed activities and the assessed potential for interaction with other marine users.	**(6)** Woodside noted AMSA's recommendation regarding offshore guard vessels and confirmed that the recommendation would be considered as part of the evaluation of controls to manage vessel interaction risks.	**(6)** No changes or additional measures are required. The consideration and selection of controls for interactions with third-party vessels are addressed in Section 6.8.1 of the EP.
(7) Recommended Woodside consults with Kimberley Ports.	**(7)** Woodside accepts AMSA – Navigation Safety's advice that Woodside provide consultation material to Kimberly Ports.	**(7)** Woodside confirmed that Kimberley Ports had been consulted for the purposes of this EP, in line with AMSA – Navigation Safety's guidance.	**(7)** No changes or additional measures are required. Woodside provided consultation information to Kimberley Ports, as evidenced in Table 2 of Appendix F in this EP.

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(8) Requested Woodside notify AHO no less than four weeks before operations commence.	**(8)** Woodside commits to notify AHO no less than four weeks prior to the commencement of the first activity under the EP, and then subsequently when vessels are undertaking activities within the Operational Area for more than three weeks at a time.	**(8)** Woodside confirmed that it would notify AHO no less than four weeks prior to the commencement of the first activity under the EP, and then subsequently when vessels are undertaking activities within the Operational Area for more than three weeks at a time	**(8)** No changes or additional measures are required as a notification to AHO has been included in the EP as standard, as referenced as PS 1.3 and 1.4 and set out in Section 7.10.
(9) Requested Woodside notify AMSA's Joint Rescue Coordination Centre (JRCC) 72-96 hours before operations commence.	**(9)** Woodside acknowledges that notification to AMSA is appropriate but considers that a 24-48 hour notification timeframe is proportionate to the short-duration and localised nature of the proposed activities. Potential interactions are limited to the immediate vicinity of the survey vessel, with geophysical vessels retaining sufficient manoeuvrability to avoid conflicting vessel paths under standard navigation rules and stationary geotechnical drilling operations expected to have minimal impact on other marine operations.	**(9)** Woodside confirmed that, where operationally practicable, AMSA's JRCC would be notified at least 24-48 hours before the relevant activities commence for promulgation of radio-navigation warnings. Woodside further noted the vessel, satellite communications, Operational Area, requested-clearance and activity timing information required by AMSA.	**(9)** No changes or additional measures are required. Control C 1.4 requires AMSA's JRCC to be notified 24-48 hours before activities commence.
(10) Reminded Woodside that project vessels should exhibit lights and shapes appropriate to the nature of their operations, comply with the International Regulations for Preventing Collisions at Sea and correctly set their navigational status in AIS.	**(10)** Woodside acknowledges that compliance with applicable collision-prevention and navigational safety requirements is necessary to manage potential interactions with other marine users.	**(10)** Woodside noted AMSA's advice and confirmed that compliance with the International Regulations for Preventing Collisions at Sea and the Navigation Act 2012 is mandated aboard Woodside-chartered vessels, including requirements for appropriate lights and shapes and correct AIS navigational status.	**(10)** No changes or additional measures are 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	Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback	No changes or additional measures are required.

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	the EP relates, as required under Regulation 24.	may be received as part of ongoing consultation. Should further feedback be received, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.8.1 of the EP).	Controls addressing light emissions and compliance with the international rule for preventing collisions at sea are set out in Section 6 of the EP.

Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with AMSA – Navigation 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:

Sufficient Information

Woodside has given AMSA – Navigation Safety sufficient information to allow AMSA – Navigation Safety 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 April 2026. Woodside gave this information to AMSA – Navigation Safety on 28 April 2026, 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 Petroleum Activities Program, 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).
- In addition to the Consultation Information Sheet, Woodside provided AMSA – Navigation Safety with information tailored to AMSA – Navigation Safety by providing a vessel density map in relation to the activity.
- On 3 June 2026, AMSA – Navigation Safety 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.
- In addition to the information in the Consultation Information Sheet, Woodside provided additional information to AMSA – Navigation Safety in response to AMSA – Navigation Safety's feedback (Woodside's email of 26 August 2026).

Reasonable Period

Woodside allowed AMSA – Navigation Safety a reasonable period for consultation in the preparation of the EP because:

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- A consultation period was stated in the initial correspondence to AMSA – Navigation 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 and Woodside allowed AMSA – Navigation Safety 30 days for consultation.
- Consultation for this EP commenced 5 months ago.
- In this context, Woodside allowed AMSA – Navigation Safety 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 – Navigation Safety is appropriate and adapted to the nature of interests of AMSA – Navigation 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 a targeted social media campaigns (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.

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 – Navigation 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(b) and 34(g), Woodside has:
  - Responded to feedback from AMSA – Navigation Safety.
  - Made no changes or inclusions to the EP as a result of consultation with AMSA – Navigation Safety 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.

4.1.7 Department of Agriculture, Fisheries and Forestry (DAFF) – Fisheries

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed DAFF – Fisheries advising of the proposed activity (Record of Consultation, reference 6.1.11), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans: Information for the community*'.
- On 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).

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Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional measures are required. Woodside has assessed the potential for interaction with Commonwealth managed commercial fisheries in Section 4.10.1 of the EP.

Summary Report – Consultation Complete

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:

Sufficient Information

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:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since April 2026. Woodside gave this information to DAFF – Fisheries on 28 April 2026, 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 Petroleum Activities Program, 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 DAFF – Fisheries a reasonable period for consultation in the preparation of the EP because:

- 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.
- Woodside's methodology allows a 30-day consultation period and Woodside allowed DAFF – Fisheries 30 days for consultation.
- Consultation for this EP commenced 5 months ago.

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- In this context, Woodside allowed DAFF – Fisheries 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 – Fisheries is appropriate and adapted to the nature of interests of DAFF – Fisheries:

- 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 a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, 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.

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4.1.8 Department of Foreign Affairs and Trade (DFAT)

Summary of information provided and record of consultation for this EP:

- On 19 June 2026, Woodside emailed DFAT, on the recommendation of AFMA, to seek advice on the Traditional Indonesian fishing Memorandum of Understanding Box near Scott Reef and advising of the proposed activity (Record of Consultation, reference 6.1.42), provided a Consultation Information Sheet, a link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans: Information for the community*'.
- On 13 July 2026, DFAT responded to Woodside (SI Report A, reference 4.1). DFAT raised items **(1)** and **(2)**.
- On 14 July 2026, Woodside thanked DFAT for its response (SI Report A, reference 4.2). Woodside responded to items **(1)** and **(2)**.
- On 15 July 2026, DFAT thanked Woodside for the reply and confirmed it had consulted with colleagues in Jakarta and the extension will be sufficient (SI Report A, reference 4.3).
- On 21 July 2026, DFAT emailed Woodside (SI Report A, reference 4.4). DFAT raised item **(3)**.
- On 23 July 2026, Woodside responded to DFAT and provided a map detailing the EMBA in relation to the border(s) between Australia and Indonesia's Exclusive Economic Zone (EEZ) (SI Report A, reference 4.5). Woodside responded to item **(3)**.
- On 24 July 2026, DFAT thanked Woodside for providing the advice and confirmed that information had been conveyed to DFAT colleagues in Jakarta (SI Report A, reference 4.6).
- On 11 August 2026, Woodside emailed DFAT a reminder regarding feedback on this EP (SI Report A, reference 4.7).
- On 11 August 2026, DFAT emailed Woodside and raised item **(4)** (SI Report A, reference 4.8).
- On 11 August 2026, Woodside thanked DFAT for its assistance navigating international consultation and responded to item **(4)** (SI Report A, reference 4.8).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
(1) Requested an extension to facilitate engagement with DFAT representatives in Jakarta.	**(1)** Woodside understands DFAT and counterparts in Indonesia require additional time to provide feedback.	**(1)** Woodside noted DFAT's request and granted an extension to the consultation period.	**(1)** No changes or additional measures are required.
(2) Requested that Woodside include a specific email address in future consultation with DFAT regarding Indonesia.	**(2)** Woodside acknowledges DFAT's advice and will include the specified email address in future consultation where relevant.	**(2)** Woodside confirmed that moving forward it would include the email in consultation with DFAT regarding Indonesia.	**(2)** No changes or additional measures are required.
(3)	**(3)**	**(3)**	**(3)**

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Requested confirmation as to whether the EMBA extends beyond Australia's Exclusive Economic Zone.	Woodside has assessed that the EMBA for this EP extends beyond Australia's Exclusive Economic Zone.	Woodside noted that the delineation of the Australia-Indonesia EEZ boundary is complex, as the relevant bilateral treaty has not yet entered into force despite being used operationally for boundary depiction (by Geoscience Australia). Woodside confirmed the EMBA for this EP extends beyond Australia's Exclusive Economic Zone.	No changes or additional measures are required.
(4) DFAT's Indonesian team confirmed they had no feedback and advised other branches of DFAT had received the information.	**(4)** Woodside understands DFAT's Indonesia team has no feedback.	**(4)** Woodside noted that DFAT's Indonesia team had no feedback.	**(4)** No changes or additional measures are 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, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.8.1 of the EP).	No changes or additional measures are required. Woodside will notify DFAT in the event of an unplanned incident as described in the First Strike Plan (Appendix H) of this EP.
Summary Report – Consultation Complete			
Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with DFAT 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 DFAT sufficient information to allow DFAT 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 April 2026. Woodside gave this information to DFAT on 19 June 2026, 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 Petroleum Activities Program, 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).
- On 13 July 2026, DFAT shared its feedback, claims or objections regarding this activity, indicating the information provided was sufficient to enable DFAT to make an informed assessment of the possible consequences of the activity on its functions, interests or activities.
- In addition to the information in the Consultation Information Sheet, Woodside provided additional information to DFAT in response to DFAT's feedback (Woodside's email of 23 July 2026).

Reasonable Period

Woodside allowed DFAT a reasonable period for consultation in the preparation of the EP because:

- A consultation period was stated in the initial correspondence to DFAT 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 and Woodside allowed DFAT 30 days for consultation.
- Consultation for this EP commenced 3 months ago.
- In this context, Woodside allowed DFAT 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 DFAT is appropriate and adapted to the nature of interests of DFAT:

- 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 a targeted social media campaigns (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.

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:

- DFAT 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(b) and 34(g), Woodside has:
  - Responded to feedback from DFAT.
  - Made no changes or inclusions to the EP as a result of consultation with DFAT 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.

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4.1.9 Department of Defence (DoD)

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed DoD advising of the proposed activity (Record of Consultation, reference 6.1.8), provided a Consultation Information Sheet, a link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans: Information for the community',* and a defence zones map.
- On 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional measures are required. Woodside has recorded the defence areas overlapping the EMBA in Section 4.10.9 of the EP.

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 April 2026. Woodside gave this information to DoD on 28 April 2026, 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 Petroleum Activities Program, 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'.*

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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).
- In addition to the Consultation Information Sheet, Woodside provided DoD with information tailored to DoD by providing a defence zones map in relation to the activity.

Reasonable Period

Woodside allowed DoD a reasonable period for consultation in the preparation of the 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 and Woodside allowed DoD 30 days for consultation.
- Consultation for this EP commenced 5 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 a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, 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.

4.1.10 Department of Planning, Lands and Heritage (DPLH)

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed DPLH advising of the proposed activity (Record of Consultation, reference 6.1.20), provided a Consultation Information Sheet, a link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans: Information for the community',* and shipwrecks data.
- On 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).

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Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional measures are required. The EP demonstrates that there are no known underwater heritage sites or shipwrecks within the Operational Area and identifies that there are no credible impacts to the values of any underwater heritage or shipwrecks as a result of planned activities (Sections 4.9.8 and 6.11 of the EP). While impacts to underwater heritage sites or shipwrecks are possible in the event of an unplanned hydrocarbon spill, Woodside considers it adopts appropriate controls to prevent a hydrocarbon spill and controls to respond in the highly unlikely event of a hydrocarbon spill, as demonstrated in Section 6.9 of the EP.

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 April 2026. Woodside gave this information to DPLH on 28 April 2026, 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 Petroleum Activities Program, and proposed mitigation and management measures.
  - A timeframe for consultation and the provision of feedback.

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  - 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).
- In addition to the Consultation Information Sheet, Woodside provided DPLH with information tailored to DPLH by providing shipwreck data in relation to the activity.

Reasonable Period

Woodside allowed DPLH a reasonable period for consultation in the preparation of the 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 and Woodside allowed DPLH 30 days for consultation.
- Consultation for this EP commenced 5 months ago.
- In this context, Woodside allowed DPLH 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 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 a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, reminding DPLH 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 DPLH 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 DPLH's functions, interests or activities.

4.1.11 Department of Primary Industries and Regional Development (DPIRD)

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed DPIRD advising of the proposed activity (Record of Consultation, reference 6.1.15), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans: Information for the community*'.

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- On 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional measures are required. Woodside has assessed the potential for interaction with State managed fisheries issues in Section 4.10.1 of the EP.

Summary Report – Consultation Complete

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:

Sufficient Information

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:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since April 2026. Woodside gave this information to DPIRD on 28 April 2026, 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 Petroleum Activities Program, 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 DPIRD a reasonable period for consultation in the preparation of the EP because:

- 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.

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- Woodside's methodology allows a 30-day consultation period and Woodside allowed DPIRD 30 days for consultation.
- Consultation for this EP commenced 5 months ago.
- In this context, Woodside allowed DPIRD 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 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 a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, reminding DPIRD 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 DPIRD 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 DPIRD's functions, interests or activities.

4.1.12 Department of Transport and Major Infrastructure (DTMI)

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed DTMI 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 15 May 2026, DTMI thanked Woodside for the opportunity to provide feedback (SI Report A, reference 5.1). DTMI noted item **(1)**.
- On 15 May 2026, Woodside thanked DTMI for its response (SI Report A, reference 5.2). Woodside responded to item **(1)**.
- On 3 July 2026, Woodside sent DTMI the Oil Pollution First Strike Plan for this EP for DTMI's review and comment (SI Report A, reference 5.3).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
(1)	**(1)**	**(1)**	**(1)**

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DTMI advised its maritime environmental team had no feedback at this time.	Woodside accepts that DTMI has no feedback at this time.	Woodside noted that DTMI has no feedback.	No changes or additional measures are 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, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.8.1 of the EP).	No changes or additional measures are required. Woodside will consult DTMI if there is a spill impacting State waters from the proposed activity, as referenced in the Oil Pollution First Strike Plan (Appendix H).

Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with DTMI 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 DTMI sufficient information to allow DTMI 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 April 2026. Woodside gave this information to DTMI on 28 April 2026, 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 Petroleum Activities Program, 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).
- On 29 April 2026, DTMI shared its feedback, claims or objections regarding this activity, indicating the information provided was sufficient to enable DTMI to make an informed assessment of the possible consequences of the activity on its functions, interests or activities.

Reasonable Period

Woodside allowed DTMI a reasonable period for consultation in the preparation of the EP because:

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- A consultation period was stated in the initial correspondence to DTMI 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 and Woodside allowed DTMI 30 days for consultation.
- Consultation for this EP commenced 5 months ago.
- In this context, Woodside allowed DTMI 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 DTMI is appropriate and adapted to the nature of interests of DTMI:

- 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 a targeted social media campaigns (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In addition, on 3 July 2026, Woodside provided DTMI with a copy of the Oil Pollution First Strike Plan, giving DTMI further opportunities to provide feedback on the activity.

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:

- DTMI 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(b) and 34(g), Woodside has:
  - Responded to feedback from DTMI.
  - Made no changes or inclusions to the EP as a result of consultation with DTMI 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.

4.1.13 Western Australian Museum (WAM)

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed WAM advising of the proposed activity (Record of Consultation, reference 6.1.19), provided a Consultation Information Sheet, a link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans: Information for the community',* and shipwreck data.
- On 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).

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Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional measures are required. The Environment Plan demonstrates that there are no known underwater heritage sites or shipwrecks within the Operational Area and identifies that there are no credible impacts to the values of any underwater heritage or shipwrecks as a result of planned activities (Sections 4.9.8 and 6.8 of the EP). While impacts to underwater heritage sites or shipwrecks are possible in the event of an unplanned hydrocarbon spill, Woodside considers it adopts appropriate controls to prevent a hydrocarbon spill and controls to respond in the highly unlikely event of a hydrocarbon spill, as demonstrated in Section 6.9 of the EP. As part of ongoing consultation engagements as set out in Table 7-6 of the EP, Woodside will notify WAM of any unexpected finds of potential Underwater Cultural Heritage under the Unexpected Finds Procedure (as described in Section 7.2.3 of the EP).
Summary Report – Consultation Complete			
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:			

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Sufficient Information

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:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since April 2026. Woodside gave this information to WAM on 28 April 2026, 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 Petroleum Activities Program, 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).
- In addition to the Consultation Information Sheet, Woodside provided WAM with information tailored to WAM by providing shipwreck data in relation to the activity.

Reasonable Period

Woodside allowed WAM a reasonable period for consultation in the preparation of the 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 and Woodside allowed WAM 30 days for consultation.
- Consultation for this EP commenced 5 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 a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, 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.

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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 WAM'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)

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed DAFF – Biosecurity advising of the proposed activity (Record of Consultation, reference 6.1.13), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans: Information for the community*'.
- On 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional measures are required. Vessels are required to comply with the Australian Biosecurity Act 2015, specifically the Australian Ballast Water Management Requirements (as defined under the Biosecurity Act 2015) (aligned with the International Convention for the Control and Management of Ships' Ballast Water and Sediments) to prevent introducing IMS. Vessels will be assessed and managed to prevent the introduction of invasive marine species in accordance with Woodside's Invasive Marine Species Management Plan (see Section 7.2.2 of the EP).

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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 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: **Sufficient Information** 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: • The Consultation Information Sheet for this EP has been publicly available on the Woodside website since April 2026. Woodside gave this information to DAFF – Biosecurity on 28 April 2026, 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 Petroleum Activities Program, 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 DAFF – Biosecurity a reasonable period for consultation in the preparation of the 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 and Woodside allowed DAFF – Biosecurity 30 days for consultation. • Consultation for this EP commenced 5 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 a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation. • In the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, reminding DAFF – Biosecurity 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 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)

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed DBCA advising of the proposed activity (Record of Consultation, reference 6.1.23), provided a Consultation Information Sheet, a link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans: Information for the community*'.
- On 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).
- On 27 May 2026, DBCA thanked Woodside for the information provided (SI Report A, reference 6.1). DBCA raised items **(1)** – **(4)**.
- On 9 July 2026, Woodside thanked DBCA for their response (SI Report A, reference 6.2). Woodside responded to items **(1)** – **(4)**.

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
(1) Recommended GPGT surveys are conducted as far as practicable outside important breeding and migration periods for threatened species such as but not limited to green turtles and pygmy blue whales.	**(1)** Woodside has considered the potential presence of marine fauna in the area of the proposed activities and has adopted a risk-based approach to temporal management. As well as standard marine fauna management measures, Woodside will limit activities with potential acoustic impacts within pygmy blue whale foraging BIA when pygmy blue whales are likely to be foraging.	**(1)** Woodside advised the EP had adopted a risk-based approach to temporal management which recognised seasonal patterns of species, applied mitigation measures where fauna might be present, and maintained flexibility for safe and practicable execution of survey activities. In addition to standard marine fauna management measures, Woodside advised it would also limit activities with potential acoustic impacts where possible within the pygmy blue whale	**(1)** No changes or additional measures are required. Controls for underwater noise impacts to marine fauna are addressed in Section 6.8.3 of the EP.

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		possible foraging BIA during certain times of the year when pygmy blue whales were likely to be foraging including an avoidance period to be applied to geotechnical drilling activities.	
(2) Recommended a risk assessment to determine the likelihood and consequence of potential impacts on marine fauna, accounting for the nature, scale and biological significance of underwater noise generated by the activity. Management of operations should be commensurate with risk level of activities.	**(2)** Woodside has prepared the EP on a risk-based basis. The EP identifies relevant marine fauna receptors that may occur within the project area; assesses credible impact pathways including underwater noise, and evaluates likelihood and consequence of impacts based on nature and scale of the proposed survey activities. Management measures are commensurate with assessed level of risk and to demonstrate that impacts and risks are reduced to ALARP and are of an acceptable level.	**(2)** Woodside advised it agreed survey activities should be informed by a risk assessment that considered the likelihood and consequence of potential impacts to marine fauna, taking into account the nature, scale and biological significance of noise generated, consistent with the EP acceptance criteria under regulation 34 of the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Cth).* The EP has been prepared on this risk-based basis identifying relevant marine fauna receptors that may occur, assessing credible impact pathways including underwater noise, and evaluating likelihood and consequence of impacts based on nature and scale of the proposed survey activities. Management measures demonstrate impacts and risks are reduced to ALARP and are of an acceptable level.	**(2)** No changes or additional measures are required. Controls for underwater noise impacts to marine fauna are addressed in Section 6.8.3 of the EP.
(3) Best practice management of any significant underwater noise with potential to impact marine fauna should include: • Underwater noise modelling	**(3)** Woodside accepts DBCA's comments regarding best practice underwater noise management and agrees it should be commensurate with potential risk to marine fauna.	**(3)** Woodside noted DMBA's comments regarding best practice underwater noise management and agreed management of underwater noise should be commensurate with potential risk to marine fauna and a structured approach to identifying observation zones and	**(3)** No changes or additional measures are required. Controls for underwater noise impacts to marine fauna are addressed in Sections 6.8.3 and 6.9.3 of the EP.

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• Management zones - where pre start-up visual observation and acoustic monitoring to detect fauna beneath the surface should be standard practice • Marine Fauna Observers (MFOs). Pointed to further information on best practice underwater noise management in EPBC Act Policy Statement 2.1. noting the information was specific to interactions between seismic activities and whales and additional information for other marine fauna was likely required.	Underwater acoustic modelling has been undertaken for this EP. The EP includes the use of MFOs. Additional monitoring technologies, such as passive acoustic monitoring, are typically applied to higher-intensity or large-scale sound sources and are not considered necessary for the proposed activities. If dynamic positioning thrusters were used, a 30-minute pre-start observation period would be applied out to 3.4 km. Woodside notes DBCA's reference to EPBC Act Policy Statement 2.1. however this is not applicable to GPGT survey activities given the different nature and significantly lower intensity of the proposed sound sources as compared to seismic activities.	implementing mitigation measures was appropriate. Woodside advised underwater acoustic modelling had been undertaken to inform the EP, acoustic characteristics of survey equipment were well understood, and that the dominant noise source for the activities were the vessels. The EP included the use of trained crew members to identify and manage interactions with marine fauna and a qualified MFO would be on board for geotechnical drilling activities. Passive acoustic monitoring however was not necessary for the proposed activities. Woodside noted if dynamic positioning thrusters were to be used, a 30-minute pre-start observation period would apply out to 3.4 km, the distance to behavioural response threshold as determined by acoustic modelling. Woodside further noted the reference to EPBC Act Policy Statement 2.1. was specific to seismic activities and was not required to be applied to GPGT activities.	
(4) Recommended acoustic monitoring for operations at night and vessel lighting at night is designed to align with the standards of the National Light Pollution Guidelines for Wildlife (DCCEEW 2023). Regarding BIAs considered in the EP for pygmy blue whales, whale sharks and marine turtles, Recommended that if surveys occur during the northern migration route for pygmy blue whales,	**(4)** Woodside has assessed and managed risks related to operations undertaken at night in the EP and does not agree that acoustic monitoring (e.g. Passive Acoustic Monitoring (PAM) is necessary for night-time operations. Pre-start observations will be completed using a night vision device. The EP has adopted a risk-based approach to light management and will	**(4)** Woodside acknowledged the challenge of detecting marine fauna during night-time operations however advised the EP appropriately assesses and manages these risks. Woodside stated it did not agree acoustic monitoring was necessary and measures in the EP were appropriate. Pre-start observations would be completed using a night vision device.	**(4)** No changes or additional measures are required. Controls for light emission are addressed in Section 6.8.4 of the EP.

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an appropriate shut-down zone is applied. Given remoteness of survey areas, providing relevant information to State, Northern Territory, and Commonwealth agencies, such as underwater video, photographs, or bathymetry, would enhance understanding of the area's biology and ecology. Acknowledged the Browse to NWS proposal is currently under assessment and DBCA will be provided input through the EP process.	consider relevant guidance, including the National Light Pollution Guidelines for Wildlife, where practicable. Woodside considers the EP appropriately considers BIAs and the potential presence of sensitive species, including pygmy blue whales. It is also undertaking ongoing acoustic and ecological monitoring at Scott Reef, to improve understanding of pygmy blue whale distribution, migration patterns and foraging behaviour. Woodside acknowledges the DBCA's email address for future notifications.	Woodside noted it adopted a risk-based approach to light management, including control measures to minimise unnecessary light emissions and would consider relevant guidance, including the National Light Pollution Guidelines for Wildlife, where practicable. Woodside noted the EP appropriately considered BIAs and the potential presence of sensitive species, including pygmy blue whales, and that it was undertaking ongoing acoustic and ecological monitoring at Scott Reef to improve understanding of pygmy blue whale distribution, migration patterns and foraging behaviour. Woodside further noted the recommendation regarding a shut-down zone for pygmy blue whales during migration periods and considered the existing EP controls and management measures to be appropriate. Woodside confirmed it would continue to use DBCA's specified address for future notifications.	
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, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.8.1 of the EP).	No changes or additional measures are required. Woodside will consult DTMI if there is a spill impacting State waters from the proposed activity, as referenced in the Oil Pollution First Strike Plan (Appendix H).

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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 DBCA 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 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:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since April 2026. Woodside gave this information to DBCA on 29 April 2026, 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 Petroleum Activities Program, 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).
- On 29 April 2026, DBCA shared its feedback, claims or objections regarding this activity, indicating the information provided was sufficient to enable DBCA to make an informed assessment of the possible consequences of the activity on its functions, interests or activities.
- In addition to the information in the Consultation Information Sheet, Woodside provided additional information to DBCA in response to DBCA's feedback (Woodside's email of 9 July 2026).

Reasonable Period

Woodside allowed DBCA a reasonable period for consultation in the preparation of the 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 and Woodside allowed DBCA 30 days for consultation.
- Consultation for this EP commenced 5 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:

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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 a targeted social media campaigns (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.

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:

- DBCA 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(b) and 34(g), Woodside has:
  - Responded to feedback from DBCA.
  - Made no changes or inclusions to the EP as a result of consultation with DBCA 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.

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

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed DCCEEW advising of the proposed activity (Record of Consultation, reference 6.1.19), provided a Consultation Information Sheet, a link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans: Information for the community',* and shipwreck data.
- On 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional measures are required. The Environment Plan demonstrates that there are no known underwater heritage sites or shipwrecks within the Operational Area and identifies that there are no credible impacts to the values of any underwater heritage or shipwrecks as a result of planned activities (Sections 4.10.4 and 6.6 of the EP). While impacts to underwater

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			heritage sites or shipwrecks are possible in the event of an unplanned hydrocarbon spill, Woodside considers it adopts appropriate controls to prevent a hydrocarbon spill and controls to respond in the highly unlikely event of a hydrocarbon spill, as demonstrated in Section 6.8 of the EP.

Summary Report – Consultation Complete

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:

Sufficient Information

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:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since April 2026. Woodside gave this information to DCCEEW on 28 April 2026, 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 Petroleum Activities Program, 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).
- In addition to the Consultation Information Sheet, Woodside provided DCCEEW with information tailored to DCCEEW by providing shipwreck data in relation to the activity.

Reasonable Period

Woodside allowed DCCEEW a reasonable period for consultation in the preparation of the 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 and Woodside allowed DCCEEW 30 days for consultation.
- Consultation for this EP commenced 5 months ago.
- In this context, Woodside allowed DCCEEW a reasonable period for consultation in preparation of the EP.

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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 a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, 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)

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, 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 '*Consultation on offshore petroleum environment plans: Information for the community*'.
- On 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).
- On 27 May 2026, DNP thanked Woodside for the opportunity to comment (SI Report A, reference 7.1). DNP raised items **(1)** - **(5)**.
- On 9 July 2026, Woodside thnked DNP for the feedback (SI Report A, reference 7.2). Woodside responded to items **(1)** - **(5)**.

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
(1) Confirmed that the planned activities do not overlap any Australian Marine Parks, but the EMBA overlaps Ashmore Reef Marine Park Sanctuary Zone, there are	**(1)** Woodside notes DNP's advice is consistent with Woodside's assessment of the activity and EMBA.	**(1)** Woodside acknowledged DNP's advice regarding overlap with marine parks and noted there were no authorisation requirements from the DNP	**(1)** No additional controls or measures are required.

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no authorisation requirements from the DNP.			A list of protected places in relation to the activity is set out in Section 4.8 of the EP.
(2) Advises that activities within the Operational Areas, including vessel manoeuvring, equipment deployment and recovery, maintenance, crew changes and resupply, should be included in the EP, noting that any such activity occurring within an Australian Marine Park without the required authorisation or inclusion in an accepted EP may be inconsistent with EPBC Act requirements and relevant marine park management plans.	**(2)** Woodside acknowledges DNP's clarification regarding the scope of operational activities and will not undertake activities within an Australian Marine Park that require authorisation from DNP, unless the relevant authorisation has been obtained.	**(2)** Woodside noted DNP's clarification regarding the scope of Operational Area activities. Woodside confirmed that it would not undertake activities within an Australian Marine Park that require authorisation from DNP, unless the relevant authorisation has been obtained.	**(2)** No additional controls or measures are required.
(3) Noted that the *North-west Marine Parks Network Management Plan 2018* provides additional information on the natural, cultural, heritage and socio-economic values of the Ashmore Reef and Kimberley Australian Marine Parks, and advises that spatial information on these values is available through the Australian Marine Spatial Information System.	**(3)** Woodside has considered the *North-west Marine Parks Network Management Plan 2018* during development of the EP and is aware that spatial information on marine parks' values is located on the Australian Marine Spatial Information System.	**(3)** Woodside confirmed that it has referred to the *North-west Marine Parks Network Management Plan 2018* during development of the EP and notes that information on Australian Marine Park values, including spatial information is available through the Australian Marine Spatial Information System.	**(3)** No additional controls or measures are required. A list of protected places in relation to the activity is set out in Section 4.8 of the EP.
(4) No further notifications are required unless details regarding the activity change and result in an overlap with or new impact to a marine park.	**(4)** Woodside acknowledges that DNP do not require further notifications unless details regarding the activity change and result in a new impact to a marine park.	**(4)** Woodside noted that DNP does not require further notifications but confirmed that it will notify DNP if details regarding the activity change and result in a new impact to a marine park.	**(4)** No additional controls or measures are required.
(5)	**(5)**	**(5)**	**(5)**

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Requested to be notified as soon as possible of any oil or gas pollution incidents affecting or likely to affect a marine park, outlined the information it required from the notification, and noted DNP might request regular situation reports depending on the severity of an incident.	Woodside acknowledges DNP's expectations and in the highly unlikely event of a hydrocarbon release, Woodside will notify DNP as soon as practicable via the 24-hour Marine Compliance Officer if the incident occurs within a marine park or is likely to impact a marine park.	Woodside advised that for emergency responses, it would notify the 24-hour Marine Compliance Duty Officer based on the information requirements requested. Woodside also noted that DNP may request situational reports based on the scale and severity of the incident.	As set out in the Oil Pollution First Strike Plan (Appendix H), Woodside will notify DNP as soon as practicable where an incident occurs in, or is like to impact on, a marine park.
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, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.8.1 of the EP).	No changes or additional measures are required. The EP demonstrates how Woodside will identify and manage all impacts and risks on Australian marine park values (including ecosystem values) to an ALARP and acceptable level and that the activity is not inconsistent with the management plan (see Section 6.8 of the EP).

Summary Report – Consultation Complete

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 April 2026. Woodside gave this information to DNP on 28 April 2026, 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 Petroleum Activities Program, 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).

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- On 27 May 2026, 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.

Reasonable Period

Woodside allowed DNP a reasonable period for consultation in the preparation of the 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 and Woodside allowed DNP 30 days for consultation.
- Consultation for this EP commenced 5 months ago.
- In this context, Woodside allowed DNP 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 DNP is appropriate and adapted to the nature of interests of DNP:

- 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 a targeted social media campaigns (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.

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(b) and 34(g), Woodside has:
  - Responded to feedback from DNP.
  - Made no changes or inclusions to the EP as a result of consultation with DNP 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.

4.3 Commonwealth and WA State Government departments or agencies – industry

4.3.1 Department of Mines, Petroleum and Exploration (DMPE)

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed DMPE 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*'.

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- On 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional measures are required.

Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with DMPE 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 DMPE sufficient information to allow DMPE 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 April 2026. Woodside gave this information to DMPE on 28 April 2026, 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 Petroleum Activities Program, 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 DMPE a reasonable period for consultation in the preparation of the EP because:

- A consultation period was stated in the initial correspondence to DMPE 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.

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- Woodside's methodology allows a 30-day consultation period and Woodside allowed DMPE 30 days for consultation.
- Consultation for this EP commenced 5 months ago.
- In this context, Woodside allowed DMPE 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 DMPE is appropriate and adapted to the nature of interests of DMPE:

- 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 a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, reminding DMPE 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 DMPE 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 DMPE 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 28 April 2026, 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 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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,	No changes or additional measures are required.

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		Woodside will apply its Management of Change and Revision process (see Section 7.8.1 of the EP).	

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 April 2026. Woodside gave this information to DISR on 28 April 2026, 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 Petroleum Activities Program, 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 DISR a reasonable period for consultation in the preparation of the 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 and Woodside allowed DISR 30 days for consultation.
- Consultation for this EP commenced 5 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 a 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 the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, 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 functions, interests or activities.

4.4 Commonwealth commercial fisheries and peak representative bodies

4.4.1 Australian Southern Bluefin Tuna Industry Association (ASBTIA)

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed ASBTIA 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 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional measures are required. Woodside has assessed the potential for interaction with Commonwealth managed commercial fisheries issues in Section 4.10.1 of the EP.
Summary Report – Consultation Complete			
Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with ASBTIA 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 ASBTIA sufficient information to allow ASBTIA 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 April 2026. Woodside gave this information to ASBTIA on 28 April 2026, 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 Petroleum Activities Program, 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 ASBTIA a reasonable period for consultation in the preparation of the EP because:

- A consultation period was stated in the initial correspondence to ASBTIA 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 and Woodside allowed ASBTIA 30 days for consultation.
- Consultation for this EP commenced 5 months ago.
- In this context, Woodside allowed ASBTIA 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 ASBTIA is appropriate and adapted to the nature of interests of ASBTIA:

- 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 a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, reminding ASBTIA 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 ASBTIA 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 ASBTIA functions, interests or activities.

4.4.2 Commonwealth Fisheries Association (CFA)

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed CFA advising of the proposed activity (Record of Consultation, reference 6.1.11), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans: Information for the community*'.
- On 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional measures are required. Woodside has assessed the potential for interaction with Commonwealth managed commercial fisheries issues in Section 4.10.1 of the EP. Woodside will notify CFA as referenced as PS 1.5 in Section 6.8.1 of the EP.

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 April 2026. Woodside gave this information to CFA on 28 April 2026, 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 Petroleum Activities Program, 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: 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 CFA a reasonable period for consultation in the preparation of the 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 and Woodside allowed CFA 30 days for consultation.
- Consultation for this EP commenced 5 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 a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, 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 functions, interests or activities.

4.4.3 North West Slope Trawl Fishery

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed North West Slope Trawl Fishery licence holders advising of the proposed activity (Record of Consultation, reference 6.1.11), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans: Information for the community'*.

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- On 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional measures are required. Woodside has assessed the potential for interaction with Commonwealth managed commercial fisheries issues in Section 4.10.1 of the EP. Woodside will notify North West Slope Trawl Fishery licence holders as referenced as PS 1.5 in Section 6.8.1 of the EP.

Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation 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:

Sufficient Information

Woodside has given licence holders sufficient information to allow 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 April 2026. Woodside gave this information to licence holders on 28 April 2026, 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 Petroleum Activities Program, 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 licence holders a reasonable period for consultation in the preparation of the EP because:

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- A consultation period was stated in the initial correspondence to 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 and Woodside allowed licence holders 30 days for consultation.
- Consultation for this EP commenced 5 months ago.
- In this context, Woodside allowed 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 licence holders is appropriate and adapted to the nature of interests of 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 a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Between May and August 2026, Woodside held information stalls at community events in the Pilbara region to raise awareness of the EP and provide additional opportunities for feedback. These events were promoted in local newspapers and on social media.
- In the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, reminding licence holders 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 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 licence holders functions, interests or activities.

4.4.4 Tuna Australia

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed Tuna Australia 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 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).

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Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional measures are required. Woodside has assessed the potential for interaction with Commonwealth managed commercial fisheries issues in Section 4.10.1 of the EP.

Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with Tuna Australia 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 Tuna Australia sufficient information to allow Tuna Australia 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 April 2026. Woodside gave this information to Tuna Australia on 28 April 2026, 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 Petroleum Activities Program, 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 Tuna Australia a reasonable period for consultation in the preparation of the EP because:

- A consultation period was stated in the initial correspondence to Tuna Australia 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 and Woodside allowed Tuna Australia 30 days for consultation.
- Consultation for this EP commenced 5 months ago.

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- In this context, Woodside allowed Tuna Australia 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 Tuna Australia is appropriate and adapted to the nature of interests of Tuna Australia:

- 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 a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, reminding Tuna Australia 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 Tuna Australia 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 Tuna Australia 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 28 April 2026, Woodside emailed WAFIC 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 29 April 2026, WAFIC emailed the Marine Aquarium Managed Fishery and Northern Demersal Scalefish Fishery license holders, on behalf of Woodside, 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*'.
- On 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).
- On 10 June 2026, Woodside emailed WAFIC to confirm whether the update had been sent to fisheries pertaining to this EP (and other related Browse EPs) and requested feedback by 17 June 2026 (SI Report A, reference 8.1).
- On 25 June 2026, Woodside emailed WAFIC to confirm whether WAFIC or fishery licence holders associated with this EP (and other related Browse EPs) had feedback on this EP (and other related Browse EPs) (SI Report A, reference 8.2). No response was received.

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Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional measures are required. Woodside has assessed the potential for interaction with State managed commercial fisheries in Section 4.10.1 of the EP. Woodside has updated its assessment of relevancy for consultation purposes (see Appendix F, Table 1) to reflect WAFIC's advice and consultation guidelines.

Summary Report – Consultation Complete

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:

Sufficient Information

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:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since April 2026. Woodside gave this information to WAFIC on 28 April 2026, 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 Petroleum Activities Program, 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 WAFIC a reasonable period for consultation in the preparation of the EP because:

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- 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 and Woodside allowed WAFIC 30 days for consultation.
- Consultation for this EP commenced 5 months ago.
- In this context, Woodside allowed WAFIC 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 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 a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Between May and August 2026, Woodside held information stalls at community events in the Pilbara region to raise awareness of the EP and provide additional opportunities for feedback. These events were promoted in local newspapers and on social media.
- In the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, reminding WAFIC 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 WAFIC 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 WAFIC functions, interests or activities.

4.5.2 Marine Aquarium Managed Fishery and Northern Demersal Scalefish Fishery

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, WAFIC, on behalf of Woodside, emailed Marine Aquarium Managed Fishery and Northern Demersal Scalefish Fishery licence holders 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*'.
- As per advice from WAFIC regarding its consultation guidelines, no follow-up email was required for licence holders.

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Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional measures are required. Woodside has assessed the potential for interaction with State managed commercial fisheries in Section 4.10.1 of the EP.

Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation 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:

Sufficient Information

Woodside has given licence holders sufficient information to allow 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 April 2026. Woodside gave this information to licence holders on 28 April 2026, 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 Petroleum Activities Program, 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 licence holders a reasonable period for consultation in the preparation of the EP because:

- A consultation period was stated in the initial correspondence to 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 and Woodside allowed licence holders 30 days for consultation.
- Consultation for this EP commenced 5 months ago.

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- In this context, Woodside allowed 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 licence holders is appropriate and adapted to the nature of interests of 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 a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Between May and August 2026, Woodside held information stalls at community events in the Pilbara region to raise awareness of the EP and provide additional opportunities for feedback. These events were promoted in local newspapers and on social media.

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 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 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 28 April 2026, 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 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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	No changes or additional measures are required.

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		assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.8.1 of the EP).	

Summary Report – Consultation Complete

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:

Sufficient Information

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 April 2026. Woodside gave this information to Marine Tourism WA on 28 April 2026, 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 Petroleum Activities Program, 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 Marine Tourism WA a reasonable period for consultation in the preparation of the 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 and Woodside allowed Marine Tourism WA 30 days for consultation.
- Consultation for this EP commenced 5 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.

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- Woodside ran a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, reminding Marine Tourism WA 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 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 functions, interests or activities.

4.6.2 Pilbara/Kimberley Recreational Marine Users

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed or sent a letter to the Pilbara/Kimberley Recreational Marine Users advising of the proposed activity (Record of Consultation, reference 6.1.16 and 6.1.17) and provided a Consultation Information Sheet, and a link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans: Information for the community*'.
- On 19 May 2026, as no response had been received, Woodside proactively sent a follow-up email or letter (Record of Consultation, reference 6.2.1 and 6.2.3).
- On 25 May 2026, an individual Pilbara/Kimberley Recreational Marine User (Pearl Expeditions) emailed Woodside providing feedback (refer to Section 4.6.3).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional 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 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 April 2026. Woodside gave this information to Pilbara/Kimberley Recreational Marine Users on 28 April 2026, 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 Petroleum Activities Program, 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 the 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 and Woodside allowed Pilbara/Kimberley Recreational Marine Users 30 days for consultation.
- Consultation for this EP commenced 5 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 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 a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Between May and August 2026, Woodside held information stalls at community events in the Pilbara region to raise awareness of the EP and provide additional opportunities for feedback. These events were promoted in local newspapers and on social media.

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- In the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, 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 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 Pilbara/Kimberley Recreational Marine Users functions, interests or activities.

4.6.3 Individual Pilbara/Kimberley Recreational Marine User – Pearl Expeditions Pty Ltd (Pearl Expeditions)

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside sent a letter to Pearl Expeditions advising of the proposed activity (Record of Consultation, reference 6.1.15) and provided a Consultation Information Sheet, and a link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans: Information for the community*'.
- On 19 May 2026, as no response had been received, Woodside proactively sent a follow-up letter (Record of Consultation, reference 6.2.3).
- On 25 May 2026, Pearl Expeditions emailed Woodside (SI Report A, reference 10.1). Pearl Expeditions raised items **(1)** – **(20)**.
- On 30 July 2026, Woodside emailed Pearl Expeditions (SI Report A, reference 10.2). Woodside responded to items **(1)** – **(20)**.

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
(1) Outlined Pearl Expeditions' role and operational experience in marine expedition tourism and stated that its submission focuses on the adequacy of proposed mitigation measures for potential impacts to listed marine fauna, particularly pygmy blue whales and green turtles.	**(1)** Woodside acknowledges Pearl Expeditions' role, purpose and stated operational experience, and notes that its submission focuses on the adequacy of mitigation measures for potential impacts to listed marine fauna, particularly pygmy blue whales and green turtles.	**(1)** Woodside noted Pearl Expeditions' description of its role and purpose and acknowledged that its submission focuses on the adequacy of mitigation measures within the three GPGT survey EPs for potential impacts to listed marine fauna, particularly pygmy blue whales and green turtles.	**(1)** No changes or additional measures are required.
(2)	**(2)**	**(2)**	**(2)**

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Stated that the broader regulatory and scientific context of the Browse to NWS Project, including recent research concerning pygmy blue whale behaviour and habitat use, is relevant to assessment of the proposed GPGT survey activities. Pearl Expeditions considered that potential acoustic impacts in the vicinity of Scott Reef require assessment and mitigation commensurate with the sensitivity of listed marine fauna and the receiving environment.	Woodside acknowledges Pearl Expeditions' comments regarding the broader regulatory and scientific context of the Browse to NWS Project. Woodside considers that the EP assesses impacts and risks on an activity-specific basis appropriate to the nature and scale of the proposed GPGT survey activities, including relevant sound-source characteristics, activity duration and marine fauna exposure pathways. Woodside considers that relevant receptors and impact pathways are identified and assessed using established regulatory datasets and accepted guidance frameworks, with mitigation measures commensurate with the assessed risk. Matters relating to the broader Browse to NWS Project are outside the scope of this EP and are subject to separate approvals processes.	Woodside advised that the EP assesses impacts and risks on an activity-specific basis, taking into account relevant sound-source characteristics, activity duration and marine fauna exposure pathways. Woodside noted that the EP identifies relevant receptors, including listed cetaceans and marine turtles, assessed underwater noise and other potential impact pathways, and include mitigation measures commensurate with the assessed risk. Woodside further advised that the EP uses established regulatory datasets and accepted guidance frameworks, including biologically important areas and relevant Commonwealth guidance. Woodside clarified that matters relating to the broader Browse to NWS Project and its assessment under separate legislation are outside the scope of the EP.	No changes or additional measures are required. Potential impacts and risks are assessed in Section 6, including routine acoustic emissions in Section 6.8.3 of the EP.
(3) Cited scientific literature concerning pygmy blue whale migration, acoustic presence, habitat suitability and foraging behaviour in the Browse Basin. Pearl Expeditions considered that this evidence supports Scott Reef being treated as a functionally important foraging area and that its current classification as a possible foraging BIA may not provide an appropriate basis for assessment and mitigation.	**(3)** Woodside acknowledges that the Browse Basin forms part of a recognised migration pathway for the South-east Indian Ocean pygmy blue whale population. Woodside considers that the EP appropriately identifies pygmy blue whales as a key receptor and assesses potential impacts to migration and foraging behaviour using established regulatory datasets and accepted spatial frameworks. Assessment and mitigation measures are based on the potential	**(3)** Woodside acknowledged that the Browse Basin forms part of a recognised migration pathway for the South-east Indian Ocean pygmy blue whale population and advised that the EP identifies pygmy blue whales as a key receptor and considers both migration and potential foraging behaviour. Woodside noted that the EP uses BIAs and other Commonwealth datasets to identify areas of known or potential biological significance and adopts Scott	**(3)** No changes or additional measures are required. Pygmy blue whales and relevant BIAs are described in Section 4.6 of the EP. Potential impacts from routine acoustic emissions are assessed in Section 6.8.3 of the EP.

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	presence of pygmy blue whales and are not limited to areas classified as known habitat. Matters relating to formal BIA classification updates are outside the scope of this EP.	Reef's current classification as a possible foraging BIA. Woodside further advised that assessment and mitigation measures are applied based on the potential presence of pygmy blue whales and are not limited to areas classified as known habitat. Woodside clarified that formal updates to BIA classifications are administered by the Commonwealth and are outside the scope of the EP.	
(4) Stated concern that simultaneous use of multiple acoustic sources may contribute to cumulative underwater noise and behavioural disturbance of pygmy blue whales. Pearl Expeditions considered that the proposed 500 m zone may not prevent behavioural disturbance and requested equipment-specific acoustic modelling to define potential behavioural disturbance and injury zones.	**(4)** Woodside acknowledges that the proposed GPGT survey activities may use multiple acoustic sources but considers that vessel noise is the dominant source, with equipment-related emissions contributing a smaller and more localised component to the overall sound field. Woodside considers that equipment-specific modelling is not required because the acoustic characteristics and potential effects of the proposed equipment are well understood, the survey does not involve high-intensity seismic airguns, and potential effects are expected to be primarily limited to localised and temporary behavioural disturbance. Woodside considers that the activity-specific controls are proportionate to the assessed risks and sensitivity of the receiving environment.	**(4)** Woodside advised that vessel noise is the dominant source associated with the proposed activities, while geophysical equipment contributes a comparatively smaller and more localised component to the overall sound field. Woodside noted that the survey does not include high-intensity impulsive sources such as seismic airguns and that potential equipment-related effects are expected to be primarily limited to localised and temporary behavioural disturbance, with auditory effects expected over small and localised ranges. Woodside advised that equipment-specific or more complex acoustic modelling is not considered necessary for the proposed activity. Woodside further advised that relevant controls include compliance with applicable marine fauna interaction requirements. Where possible, activities with potential acoustic impacts will be	**(4)** No changes or additional measures are required. Pygmy blue whales and relevant BIAs are described in Section 4.6 of the EP. Potential impacts from routine acoustic emissions are assessed in Section 6.8.3 of the EP.

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		limited within the pygmy blue whale possible foraging BIA during periods when pygmy blue whales are likely to be foraging. Where noise may ensonify the possible foraging BIA, pre-start visual observations will be undertaken before starting vessel dynamic positioning and noise-emitting geophysical survey equipment, with start-up delayed if a whale is observed within the applicable observation zone. Where noise may ensonify the possible foraging BIA, a shutdown zone will also apply to sub-bottom profiler activities.	
(5) Stated that pre-start visual observations may not reliably detect pygmy blue whales foraging at depth or during darkness, poor visibility or adverse sea conditions. Pearl Expeditions also considered that the qualified timing restrictions are insufficiently binding and requested independent verification, third-party oversight or alternative detection technologies.	**(5)** Woodside acknowledges that visual detection probability varies with environmental conditions and that pygmy blue whales may remain submerged for extended periods. Woodside considers that these limitations do not render the proposed mitigation measures inadequate for the nature and risk profile of the GPGT survey activities. Woodside considers that pre-start observations and other operational controls, where relevant, appropriately manage credible close-range interaction and temporary behavioural disturbance risks. Woodside does not consider that independent verification, third-party oversight or alternative detection technologies are necessary to demonstrate that impacts and risks will	**(5)** Woodside acknowledged the inherent limitations of visual monitoring where pygmy blue whales are submerged, visibility is reduced or activities occur at night. Woodside advised that visual observations remain an established mitigation measure and are applied with other operational controls where relevant to the credible impact pathways associated with the proposed activities. Where pre-start observations are undertaken at night, a night vision device will be used. Woodside further advised that the phrase “where practicable” reflects a practicability-based assessment under which feasible limitations on survey activities have been evaluated and either adopted or justifiably not adopted, rather than making the mitigation framework discretionary.	**(5)** No changes or additional measures are required. Pygmy blue whales and relevant BIAs are described in Section 4.6 of the EP. Potential impacts from routine acoustic emissions are assessed in Section 6.8.3 of the EP.

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	be reduced to ALARP and acceptable levels.	Woodside advised that independent verification of whale absence, third-party oversight and alternative detection technologies beyond those proposed in the EP are not considered necessary to demonstrate that impacts and risks will be reduced to ALARP and acceptable levels.	
(6) Stated that the combined cumulative acoustic exposure from the EP over the five-year period has not been assessed or modelled, and considered this a gap in the assessment of potential long-term impacts to listed marine fauna.	**(6)** Woodside does not agree that a separate cumulative acoustic impact assessment across the full five-year survey program is required. Woodside considers that cumulative impacts are appropriately assessed at the activity level where relevant and that the short-duration, intermittent and spatially dispersed nature of the proposed GPGT survey activities limits the potential for temporal and spatial overlap. Woodside considers that potential acoustic impacts are temporary and localised and that the risk of cumulative effects from the GPGT survey activities is low.	**(6)** Woodside advised that environmental assessments are undertaken at the activity level, with cumulative impacts considered where relevant. Woodside noted that the short-duration, intermittent and spatially dispersed nature of the proposed GPGT survey activities is expected to result in limited temporal and spatial overlap of acoustic exposure. Woodside further advised that acoustic impacts are expected to be temporary and localised, the risk of cumulative effects from the GPGT surveys is low, and a separate cumulative acoustic impact assessment across the full five-year survey program is not considered necessary.	**(6)** No changes or additional measures are required. The timing and duration of the proposed survey activities are described in Section 3.5 of the EP. Routine acoustic emissions are assessed in Section 6.8.3 of the EP. Potential cumulative impacts are considered within the relevant impact and risk assessments in Section 6 of the EP.
(7) Requested that passive acoustic monitoring (PAM) be required before all noise-generating survey activities, with a detection zone based on the modelled behavioural disturbance range of the equipment used.	**(7)** Woodside does not consider passive acoustic monitoring to be a proportionate control for the proposed GPGT survey activities, given the lower source levels and risk profile of the equipment. Woodside considers that PAM is not required to demonstrate that impacts and risks are reduced to ALARP.	**(7)** Woodside advised that PAM is typically applied to higher-intensity seismic sources and is not considered a proportionate or necessary control for achieving ALARP outcomes for the proposed GPGT survey activities, given the lower source levels and risk profile of the equipment.	**(7)** No changes or additional measures are required. Routine acoustic emissions are assessed in Section 6.8.3 of the EP.
(8)	**(8)**	**(8)**	**(8)**

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Requested acoustic propagation modelling for all proposed acoustic sources to define potential behavioural disturbance and injury zones for pygmy blue whales.	Woodside considers that modelling of individual geophysical survey equipment is not required because vessel noise represents the principal contributor to underwater acoustic emissions, while equipment-related emissions are lower intensity, more localised and predictable from known source characteristics. Woodside considers that vessel-noise modelling sufficiently characterises the maximum credible acoustic exposure associated with the proposed activities.	Woodside confirmed that underwater acoustic modelling has been undertaken for vessel-noise scenarios within the Operational Area and documented in the EP. Woodside advised that individual equipment modelling is not considered necessary because vessel noise is the principal contributor to underwater acoustic emissions, while equipment-related emissions are comparatively smaller and more localised. Woodside noted that Multibeam echosounder (MBES) and side scan sonar (SSS) operate at high frequencies and attenuate rapidly outside their directional beams, while audible sources such as sub-bottom profiler's (SBP)s are low-power, short-pulse and directional, resulting in localised and short-range effects. Woodside therefore considers the vessel-noise assessment sufficient to characterise the maximum credible acoustic exposure associated with the proposed activities.	No changes or additional measures are required. Routine acoustic emissions are assessed in Section 6.8.3 of the EP.
(9) Requested that the qualified timing restrictions for activities within the pygmy blue whale BIA be replaced with binding, time-defined exclusion periods aligned with peak foraging and migration periods.	**(9)** Woodside does not agree that the phrase "where practicable" makes the mitigation framework discretionary or insufficiently binding. Woodside considers that the wording reflects a practicability-based assessment through which feasible limitations on survey activities are evaluated and either adopted or justifiably not adopted.	**(9)** Woodside advised that the phrase "where practicable" reflects a practicability-based assessment in which feasible limitations on survey activities have been evaluated and either adopted or justifiably not adopted. Woodside disagreed that the wording makes the mitigation framework discretionary or insufficiently binding.	**(9)** No changes or additional measures are required. Pygmy blue whales and relevant BIAs are described in Section 4.6 of the EP.

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(10) Requested that Woodside initiate a formal Commonwealth review of the Scott Reef pygmy blue whale BIA classification before survey activities commence, having regard to recent scientific literature.	**(10)** Woodside notes Pearl Expeditions' request and considers that formal review or amendment of BIA classifications is administered by the Commonwealth and is outside the scope of this EP.	**(10)** Woodside advised that formal updates to BIA classifications are administered by the Commonwealth and are outside the scope of the EP.	**(10)** No changes or additional measures are required.
(11) Requested a cumulative acoustic impact assessment for the five-year survey program, including combined noise exposure across the three Browse to NWS GPGT surveys EPs and potential seasonal overlap with the pygmy blue whale migration corridor.	**(11)** Woodside does not consider a separate cumulative acoustic impact assessment across all three EPs to be necessary. Woodside considers that each EP assesses cumulative impacts where there is potential for temporal and spatial overlap with other activities, proportionate to the scale, duration and nature of the proposed activities. Given the localised, short-term and transient nature of GPGT acoustic emissions, Woodside considers the likelihood of meaningful cumulative noise exposure affecting the pygmy blue whale migration corridor to be low.	**(11)** Woodside advised that each EP includes an assessment of cumulative impacts, including consideration of other activities with the potential for temporal and spatial overlap. Woodside noted that these assessments are proportionate to the scale, duration and nature of the activities. Given the localised, short-term and transient nature of GPGT acoustic emissions and their limited spatial extent, Woodside advised that the likelihood of meaningful cumulative noise exposure affecting the pygmy blue whale migration corridor is low. Woodside therefore considers the existing EP assessments sufficient and does not consider a separate cumulative acoustic assessment across all three EPs necessary.	**(11)** No changes or additional measures are required. The timing and duration of the proposed survey activities are described in Section 3.5 of the EP. Routine acoustic emissions are assessed in Section 6.8.3 of the EP. Potential cumulative impacts are considered within the relevant impact and risk assessments in Section 6 of the EP.
(12) Described the conservation significance and vulnerability of the green turtle population nesting at Sandy Islet, including the importance of the nesting habitat and the population's genetic isolation.	**(12)** Woodside acknowledges that Sandy Islet is an important green turtle nesting location and that marine turtle populations in the region are sensitive environmental receptors. Woodside considers that the EP appropriately identifies and assesses the	**(12)** Woodside acknowledged the importance of Sandy Islet as a green turtle nesting location and the sensitivity of marine turtle populations in the region. Woodside advised that the EP identifies and assess marine turtles, including green turtles, as relevant receptors and	**(12)** No changes or additional measures are required. Protected species, including green turtles, are described in Section 4.6 of the EP.

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	presence and conservation significance of green turtles and includes measures to avoid or minimise potential impacts from the proposed GPGT survey activities.	include management measures to avoid or minimise potential impacts from the proposed GPGT survey activities.	Potential impacts and associated controls relevant to marine turtles are addressed in the applicable impact and risk assessments in Section 6.
(13) Stated concern that artificial lighting from survey vessels operating at night could disorient green turtle hatchlings at Sandy Islet. Pearl Expeditions requested defined lighting limits and independent monitoring where survey activities overlap with green turtle nesting and hatchling emergence periods.	**(13)** Woodside acknowledges that artificial lighting is a potential impact pathway for marine turtles, particularly hatchlings, but does not agree that defined lighting limits or independent monitoring are required. Woodside considers that potential lighting impacts are appropriately assessed and managed, having regard to the short duration of the activities, the distance from Sandy Islet and controls to minimise unnecessary light emissions while maintaining safe operations.	**(13)** Woodside advised that Sandy Islet is at least 14 km from the Operational Area boundary (of the Browse to NWS Project GPGT Surveys State EP) and that no survey activities are planned within 14 km of the nesting location. Woodside further advised that potential lighting impacts are limited by the short duration and distance of the activities and are managed through controls designed to minimise unnecessary light emissions while maintaining safe operations. Woodside therefore did not consider fixed lighting limits or independent monitoring of green turtle nesting and hatchlings necessary to appropriately manage the potential impacts and risks.	**(13)** No changes or additional measures are required. Protected species, including green turtles, are described in Section 4.6 of the EP. Routine light emissions are assessed in Section 6.8.4 of the EP.
(14) Stated concern that geotechnical survey activities may disturb and compact seabed sediments and contribute to subsidence effects at Sandy Islet. Pearl Expeditions also raised concerns regarding the currency, transparency and independent verification of production-related subsidence modelling for the broader Browse to NWS Project.	**(14)** Woodside acknowledges that geotechnical survey activities involve localised seabed interaction through sampling and in situ testing. Woodside considers that these activities have a limited footprint, involve discrete sampling locations and do not remove material at a scale capable of altering seabed structure beyond the immediate sampling area. Woodside considers there is no credible pathway for the proposed GPGT survey activities to cause subsidence effects at	**(14)** Woodside advised that geotechnical survey activities involve localised seabed interaction at discrete sampling locations and do not remove material at a scale capable of altering seabed structure beyond the immediate sampling area. Woodside therefore advised that there is no credible pathway for the proposed GPGT survey activities to result in subsidence effects at Sandy Islet.	**(14)** No changes or additional measures are required. Potential seabed disturbance associated with geotechnical survey activities are assessed in Section 6.8.2 of the EP, with routine and non-routine discharges addressed in Section 6.8.6 of the EP.

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	Sandy Islet. Production-related subsidence and associated modelling are outside the scope of this EP and are addressed through separate approvals processes.	Woodside clarified that production-related subsidence, including associated modelling assumptions, data transparency and cumulative effects, is outside the scope of the EP and is addressed through separate approvals processes. Woodside also did not agree that the referenced production-related modelling had not been independently verified, noting that independent experts undertook the modelling and that the results were published by SLB (formerly known as Schlumberger).	
(15) Requested quantified lighting levels and binding maximum lux thresholds at the Operational Area boundary and specified distances from Sandy Islet during the green turtle nesting season.	**(15)** Woodside does not consider quantified lighting levels or binding lux thresholds at the distances proposed by Pearl Expeditions to be required, as survey activities are not planned within 5 km of Sandy Islet and the Operational Areas are located more than 14 km from Sandy Islet.	**(15)** Woodside advised that no survey activities are planned within 5 km of Sandy Islet and that the Operational Areas are located more than 14 km from Sandy Islet.	**(15)** No changes or additional measures are required. Routine light emissions are assessed in Section 6.8.4 of the EP.
(16) Requested independent monitoring of green turtle nesting and hatchling emergence during any survey activities that overlap with the nesting and hatchling emergence season.	**(16)** Woodside does not consider independent monitoring of green turtle nesting and hatchlings necessary to appropriately manage potential impacts from the proposed activities. Woodside considers that potential lighting impacts are limited by the short duration of the activities and are appropriately managed through controls and management plans designed to minimise unnecessary light emissions while maintaining safe operations.	**(16)** Woodside advised that potential lighting impacts are limited by the short duration of the activities and managed through controls and management plans designed to minimise unnecessary light emissions while maintaining safe operations. Woodside did not agree that independent monitoring of green turtle nesting and hatchlings is necessary to appropriately manage the potential impacts and risks associated with the proposed activities.	**(16)** No changes or additional measures are required. Protected species, including green turtles, are described in Section 4.6 of the EP. Routine light emissions are assessed in Section 6.8.4 of the EP.

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(17) Requested an independent geomechanical review of potential subsidence effects near Scott Reef before the geotechnical survey program commences.	**(17)** Woodside does not consider an independent geomechanical review necessary for the proposed GPGT survey activities. Woodside considers that seabed disturbance is limited to discrete sampling locations and that, as the surveys do not interact with the reservoir, there is no credible pathway linking the activities to measurable subsidence effects at Scott Reef.	**(17)** Woodside advised that disturbance from the proposed survey activities is limited in footprint and spatial extent and involves discrete sampling locations. Woodside did not agree that production-related subsidence studies are relevant to the assessment of GPGT survey activities, as the surveys do not interact with the reservoir and no credible pathway exists linking them to measurable subsidence effects at a reef-scale feature.	**(17)** No changes or additional measures are required.
(18) Requested that Woodside publicly release the full subsidence modelling dataset.	**(18)** Woodside considers that production-related subsidence modelling related to the broader Browse to NWS Project and is outside the scope of this EP. These matters are addressed through separate approvals processes.	**(18)** Woodside advised that production-related subsidence matters associated with the broader Browse to NWS Project, including modelling assumptions, data transparency and cumulative effects, are addressed through separate approvals processes and are outside the scope of the EP.	**(18)** No changes or additional measures are required.
(19) Stated concern that the current Scott Reef pygmy blue whale BIA classification may not reflect recent scientific information on migration and foraging behaviour, potentially resulting in underestimation of risk and insufficient mitigation. Pearl Expeditions requested that relevant Commonwealth regulators be notified and that a precautionary approach be adopted pending any formal BIA review.	**(19)** Woodside acknowledges that scientific understanding of pygmy blue whale distribution, migration and foraging behaviour continues to evolve. Woodside has assessed that the EP appropriately applies current regulatory BIAs, Commonwealth datasets and accepted spatial frameworks, supplemented by available scientific information and ongoing acoustic and ecological monitoring. Woodside considers that assessment and mitigation measures are based on	**(19)** Woodside acknowledged that scientific understanding of pygmy blue whale distribution and behaviour continues to evolve and noted that ongoing acoustic and ecological monitoring is being undertaken in the Browse Basin, including within and outside the Scott Reef BIA, to improve understanding of whale distribution, migration and potential foraging behaviour. Woodside advised that the EP applies current BIAs and other Commonwealth datasets to identify areas of known or	**(19)** No changes or additional measures are required. Pygmy blue whales and relevant BIAs are described in Section 4.6 of the EP. Potential impacts from routine acoustic emissions are assessed in Section 6.8.3 of the EP.

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	the potential presence of pygmy blue whales and are not limited to areas classified as known habitat. Formal review or amendment of BIA classifications is administered by the Commonwealth and is outside the scope of this EP.	potential biological significance and adopt Scott Reef's current classification as a possible foraging BIA. Woodside further advised that assessment and mitigation measures are applied based on the potential presence of pygmy blue whales and are not limited to areas classified as known habitat. Woodside clarified that formal BIA classification updates are administered by the Commonwealth and are outside the scope of the EP.	
(20) Outlined the environmental significance of Scott Reef but considered that the proposed mitigation framework does not adequately address visual-monitoring limitations, cumulative acoustic impacts or potential limitations in the current BIA classification. Pearl Expeditions concluded that the EP does not demonstrate that impacts and risks will be reduced to ALARP and requested that its proposed additional measures be incorporated.	**(20)** Woodside acknowledges that Scott Reef is an area of exceptional environmental value and considers that the proposed environmental management measures reflect the sensitivity of the receiving environment. Woodside does not agree that the EP fails to demonstrate that impacts and risks will be reduced to ALARP and acceptable levels. Woodside considers that the activity-specific controls detailed in the EP are appropriate to reduce and manage the identified impacts and risks.	**(20)** Woodside acknowledged the exceptional environmental value of Scott Reef and advised that the proposed environmental management measures reflect the sensitivity of the receiving environment. Woodside did not agree with Pearl Expeditions' conclusion that the EP fails to demonstrate that impacts and risks will be reduced to ALARP. Woodside advised that each EP details the control measures used to reduce the impacts and risks associated with the relevant activities and must demonstrate to the regulator that these will be reduced to ALARP and acceptable levels.	**(20)** No changes or additional measures are required. The environmental impact and risk assessment methodology, including the assessment of ALARP and acceptability, is included in Section 2 of the EP.
Woodside has addressed claims or objections as noted above.	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, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.7.1 of the EP).	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 Pearl Expeditions 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 Pearl Expeditions sufficient information to allow Pearl Expeditions 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 April 2026. Woodside gave this information to Pearl Expeditions on 28 April 2026, 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 Petroleum Activities Program, 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 regulation 25(4) of the Environment Regulations). • On 25 May 2026, Pearl Expeditions shared its feedback, claims or objections regarding this activity, indicating the information provided was sufficient to enable Pearl Expeditions to make an informed assessment of the possible consequences of the activity on its functions, interests or activities. • In addition to the information in the Consultation Information Sheet, Woodside provided additional information to Pearl Expeditions in response to Pearl Expeditions' feedback (Woodside's email of 30 July 2026). **Reasonable Period** Woodside allowed Pearl Expeditions a reasonable period for consultation in the preparation of the EP because: • A consultation period was stated in the initial correspondence to Pearl Expeditions 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 and Woodside allowed Pearl Expeditions 30 days for consultation. • Consultation for this EP commenced 5 months ago. • In this context, Woodside allowed Pearl Expeditions 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 Pearl Expeditions is appropriate and adapted to the nature of interests of Pearl Expeditions:

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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 a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Between May and August 2026, Woodside held information stalls at community events in the Pilbara region to raise awareness of the EP and provide additional opportunities for feedback. These events were promoted in local newspapers and on social media.
- In the absence of feedback, Woodside sent a follow-up consultation letter on 19 May 2026, reminding Pearl Expeditions 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:

- Pearl Expeditions provided feedback or claims or objections regarding the adverse impact of the proposed activity to which this EP relates. 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 Pearl Expeditions and has assessed the merits of each objection or claim (if any) 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 Pearl Expeditions 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.

4.6.4 Recfishwest

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, 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 19 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).
- On 29 May 2026, Recfishwest thanked Woodside for its email (SI Report A, reference 11.1). Recfishwest raised items **(1)** – **(3)**.
- On 9 July 2026, Woodside thanked Recfishwest for its feedback (SI Report A, reference 11.2). Woodside responded to items **(1)** – **(3)**.

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
(1) Recfishwest reiterated information provided to confirm that the information was understood correctly.	**(1)** Woodside notes that Recfishwest has correctly understood details of the EP.	**(1)** Woodside noted that that Recfishwest had understood the information provided.	**(1)** No changes or additional measures are required.

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(2) Acknowledged the importance of Scott Reef as a world class recreational fishing location.	**(2)** Woodside notes Recfishwest's comments regarding the importance of Scott Reef to the fishing community.	**(2)** Woodside noted the comments by Recfishwest regarding the importance of Scott Reef to recreational fishers.	**(2)** No changes or additional measures are required.
(3) Requested to be kept informed as activities progress.	**(3)** Woodside will keep Recfishwest informed as the activity progresses via activity notifications.	**(3)** Woodside confirmed it would provide notifications so Recfishwest can stay informed as the activity progresses.	**(3)** No changes or additional measures are required. Woodside will provide notifications to Recfishwest as set out in Section 7.10 of the 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, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.8.1 of the EP).	No changes or additional measures are required.

Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with Recfishwest 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 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:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since April 2026. Woodside gave this information to Recfishwest on 28 April 2026, 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 Petroleum Activities Program, 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'.*

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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).
- On 29 May 2026, 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.

Reasonable Period

Woodside allowed Recfishwest a reasonable period for consultation in the preparation of the 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 and Woodside allowed Recfishwest 30 days for consultation.
- Consultation for this EP commenced 5 months ago.
- In this context, Woodside allowed Recfishwest 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 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 a targeted social media campaigns (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In the absence of feedback, Woodside sent a follow-up consultation email on (21 May 2026), reminding Recfishwest 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:

- 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(b) and 34(g), Woodside has:
  - Responded to feedback from Recfishwest.
  - 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.

4.6.5 WA Game Fishing Association

Summary of information provided and record of consultation for this EP:

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- On 28 April 2026, Woodside emailed 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 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional measures are required.

Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with 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 WA Game Fishing Association sufficient information to allow 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 April 2026. Woodside gave this information to WA Game Fishing Association on 28 April 2026, 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 Petroleum Activities Program, 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 WA Game Fishing Association a reasonable period for consultation in the preparation of the EP because:

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- A consultation period was stated in the initial correspondence to 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 and Woodside allowed WA Game Fishing Association 30 days for consultation.
- Consultation for this EP commenced 5 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 WA Game Fishing Association is appropriate and adapted to the nature of interests of 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 a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, reminding 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 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.
- The measures and controls described in this EP address the potential impact from the proposed activity on WA Game Fishing Association functions, interests or activities.

4.7 Titleholders and operators

4.7.1 Beach Energy Ltd; INPEX; Origin Energy Browse (Titleholders)

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, 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 '*Consultation on offshore petroleum environment plans: Information for the community*'.
- On 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).

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Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional measures are required.

Summary Report – Consultation Complete

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:

Sufficient Information

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:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since April 2026. Woodside gave this information to Titleholders on 28 April 2026, 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 Petroleum Activities Program, 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 Titleholders a reasonable period for consultation in the preparation of the 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 and Woodside allowed Titleholders 30 days for consultation.
- Consultation for this EP commenced 5 months ago.

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- 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 a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, 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.
- 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 PetroChina International Investment (Australia)

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed PetroChina International Investment (Australia) 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 20 May 2026, Woodside sent a follow up email to PetroChina International Investment (Australia) on the proposed activity as an out of office was received to the initial email and provided the Consultation Information Sheet (SI Report A, reference 12.1).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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	No changes or additional measures are required.

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		Change and Revision process (see Section 7.8.1 of the EP).	

Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with PetroChina International Investment (Australia) 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 PetroChina International Investment (Australia) sufficient information to allow PetroChina International Investment (Australia) 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 April 2026. Woodside gave this information to PetroChina International Investment (Australia) on 28 April 2026, 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 Petroleum Activities Program, 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 PetroChina International Investment (Australia) a reasonable period for consultation in the preparation of the EP because:

- A consultation period was stated in the initial correspondence to PetroChina International Investment (Australia) 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 and Woodside allowed PetroChina International Investment (Australia) 30 days for consultation.
- Consultation for this EP commenced 5 months ago.
- In this context, Woodside allowed PetroChina International Investment (Australia) 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 PetroChina International Investment (Australia) is appropriate and adapted to the nature of interests of PetroChina International Investment (Australia):

- 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 a 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 the absence of feedback, Woodside sent a follow-up consultation email on 20 May 2026, reminding PetroChina International Investment (Australia) 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 PetroChina International Investment (Australia) 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 PetroChina International Investment (Australia) functions, interests or activities.

4.7.3 Santos Offshore / Santos Browse

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, 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 '*Consultation on offshore petroleum environment plans: Information for the community*'.
- On 14 May 2026, Santos thanked Woodside for their email (SI Report A, reference 13.1). Santos noted item **(1)**
- On 15 May 2026, Woodside thanked Santos for its email (SI Report A, reference 13.2). Woodside responded to item **(1).**

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
(1) No objections or claims in relation to the planned activity.	**(1)** Woodside understands that Santos has no objections or claims in relation to the planned activity.	**(1)** Woodside noted that Santos had no objections or claims in relation to the planned activity	**(1)** No changes or additional measures are 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, it will be assessed and, where appropriate, Woodside will apply its	No changes or additional measures are required.

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		Management of Change and Revision process (see Section 7.8.1 of the EP).	

Summary Report – Consultation Complete

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:

Sufficient Information

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:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since April 2026. Woodside gave this information to Santos on 28 April 2026, 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 Petroleum Activities Program, 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).
- On 14 May 2026, 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.

Reasonable Period

Woodside allowed Santos a reasonable period for consultation in the preparation of the 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 and Woodside allowed Santos 30 days for consultation.
- Consultation for this EP commenced 5 months ago.
- In this context, Woodside allowed Santos 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 Santos is appropriate and adapted to the nature of interests of Santos:

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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 a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.

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(b) and 34(g), Woodside has:
  - Responded to feedback from Santos.
  - Made no changes or inclusions to the EP as a result of consultation with Santos 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.

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 28 April 2026, 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 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional 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 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 April 2026. Woodside gave this information to AEP on 28 April 2026, 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 Petroleum Activities Program, 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 AEP a reasonable period for consultation in the preparation of the 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 and Woodside allowed AEP 30 days for consultation. • Consultation for this EP commenced 5 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 a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation. • In the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, reminding AEP 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 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.

4.9 Local government and elected parliamentary representatives, community groups or organisations

4.9.1 Broome Chamber of Commerce and Industry (Broome CCI)

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed Broome 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 '*Consultation on offshore petroleum environment plans: Information for the community*'.
- On 28 April 2026, Woodside emailed Broome CCI providing further information on this and two other related Browse EPs (SI Report A, reference 19.1).
- On 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).
- On 11 June 2026, a meeting was held between Woodside and Broome CCI to provide an overview of this and two other related Browse EPs (SI Report A, reference 19.2).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional 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 Broome 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: **Sufficient Information** Woodside has given Broome CCI sufficient information to allow Broome CCI 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 April 2026. Woodside gave this information to Broome CCI on 28 April 2026, 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 Petroleum Activities Program, 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 Broome CCI a reasonable period for consultation in the preparation of the EP because: • A consultation period was stated in the initial correspondence to Broome 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 and Woodside allowed Broome CCI 30 days for consultation. • Consultation for this EP commenced 5 months ago. • In this context, Woodside allowed Broome 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 Broome CCI is appropriate and adapted to the nature of interests of Broome 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 a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation. • In the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, reminding Broome CCI 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 Broome 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 Broome CCI functions, interests or activities.

4.9.2 Shire of Broome

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, 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 '*Consultation on offshore petroleum environment plans: Information for the community*'.
- On 28 April 2026, Woodside emailed the Shire providing further information on this and two other related Browse EPs (SI Report A, reference 18.1).
- On 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).
- On 11 June 2026, a meeting was held between Woodside and the Shire to provide an overview of this and two other related Browse EPs (SI Report A, reference 18.2)

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional measures 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 Shire 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 the Shire sufficient information to allow the Shire 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 April 2026. Woodside gave this information to the Shire on 28 April 2026, 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 Petroleum Activities Program, 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 the Shire a reasonable period for consultation in the preparation of the EP because:

- A consultation period was stated in the initial correspondence to the Shire 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 and Woodside allowed the Shire 30 days for consultation.
- Consultation for this EP commenced 5 months ago.
- In this context, Woodside allowed the Shire 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 is appropriate and adapted to the nature of interests of the Shire:

- 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 a targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, reminding the Shire 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 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 Shire functions, interests or activities.

4.10 Other non-government groups or organisations (NGOs) or individuals

4.10.1 Australian Marine Conservation Society (AMCS)

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed AMCS advising of the proposed activity (Record of Consultation, reference 6.1.7) and provided a Consultation Information Sheet, and a link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans: Information for the community*'.
- On 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).
- On 28 May 2026, AMCS emailed Woodside and raised item **(1)** (SI Report A, reference 14.1).
- On 28 May 2026, Woodside emailed AMCS and responded to item **(1)** (SI Report A, reference 14.2).
- On 3 June 2026, Woodside sent an update to AMCS regarding an update on a separate but related EP.
- On 4 June 2026, AMCS emailed Woodside acknowledging the extended timeline (SI Report A, reference 14.3).
- On 16 June 2026, AMCS emailed Woodside. AMCS raised items **(2)** – **(9)** (SI Report A, reference 14.4).
- On 30 July 2026, Woodside emailed AMCS. Woodside responded to items **(2)** – **(9)** (SI Report A, reference 14.5).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
(1) Requested an extension of time to provide feedback.	**(1)** Woodside considered AMCS's request for an extension and agreed to provide additional time	**(1)** Woodside noted AMCS's request and granted an extension to the consultation period.	**(1)** No changes or additional measures are required.
(2) Provided an overview of AMCS and its core focus areas.	**(2)** Woodside notes the organisation's focus areas as stated in its correspondence.	**(2)** Woodside noted AMCS's focus areas.	**(2)** No changes or additional measures are required.
(3) Stated that the complexity and number of proposed EPs, the resources required to assess them and the limited	**(3)** Woodside considers that AMCS was provided with sufficient information and a reasonable period to make an informed	**(3)** Woodside advised that it was aware of the requirement to provide relevant	**(3)** No changes or additional measures are required.

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resources available to environmental advocacy organisations affected AMCS's ability to participate comprehensively in consultation. AMCS expressed concern that feedback from environmental organisations is not given due consideration or reflected in substantive changes to EP design, described the consultation process as inadequate and stated that its comments were overarching and not exhaustive.	assessment of the possible consequences of the activity on its functions, interests or activities, was granted additional time to provide feedback, and had its objections and claims considered in the preparation of the EP.	persons with a reasonable period for consultation. Woodside clarified that it assesses the merits of objections and claims about the adverse impacts of the proposed activity and records its response in the EP.	
(4) Stated the proposed activities raise multiple risks for marine life, including: • underwater noise • light pollution • habitat and seabed disturbance • cumulative impacts.	**(4)** Woodside considers that the EP addresses impacts and risks associated with underwater acoustic emissions from survey vessels and equipment, light emissions, habitat and seabed disturbance, and potential cumulative impacts where there is temporal and spatial overlap with other activities.	**(4)** Woodside advised that the EP addresses impacts and risks associated with underwater acoustic emissions from survey vessels and equipment, light emissions, habitat and seabed disturbance, and potential cumulative impacts where there is temporal and spatial overlap with other activities.	**(4)** No changes or additional measures are required. Potential impacts and risks associated with seabed disturbance, routine acoustic emissions and routine light emissions are assessed in Sections 6.8.2, 6.8.3 and 6.8.4 of the EP, respectively.
(5) Stated impacts from those risks may include: • habitat damage • smothering of benthic habitat • increased turbidity and sedimentation • disruption of marine species' behaviours • disorientation • persistent accumulation and bioaccumulation of toxic substances in the environment • injury or death of marine life.	**(5)** Woodside considers that the EP addresses risks with the potential to impact relevant receptors, including marine habitats, benthic communities, marine fauna and protected species. Relevant impact pathways are assessed in the EP and managed through controls and management measures to avoid or minimise impacts and reduce risks to ALARP and acceptable levels.	**(5)** Woodside advised that the EP addresses risks with the potential to impact marine habitats, benthic communities, marine fauna and protected species. Woodside further advised that relevant impact pathways are assessed and are subject to controls and management measures to avoid or minimise impacts and reduce risks to ALARP and acceptable levels.	**(5)** No changes or additional measures are required. Potential impacts associated with seabed disturbance, routine acoustic emissions, routine light emissions and routine and non-routine discharges are assessed in Sections 6.8.2, 6.8.3, 6.8.4 and 6.8.6 of the EP, respectively. Unplanned activities are assessed in Sections 6.9 of the EP.

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(6) Stated concern regarding cumulative acoustic impacts from the proposed GPGT surveys near Scott Reef, including potential continuous acoustic activity over the EP period, synergistic impacts if Browse GPGT EPs progress concurrently, and potential risks of seismic surveys to marine fauna including zooplankton and marine mammals.	**(6)** Woodside considers that the proposed GPGT survey activities are not equivalent to conventional marine seismic surveys, as they are lower intensity, more localised and more temporary in nature. Woodside further considers that the EP conservatively assesses potential activities over the five-year EP term, including repeated and recurring activities and potential cumulative impacts where relevant.	**(6)** Woodside advised that the proposed activities are GPGT survey activities and are lower intensity, more localised and more temporary than conventional marine seismic surveys. Woodside further advised that the EPs conservatively assess potential activities over the five-year EP term, including repeated, recurring and cumulative impacts where relevant.	**(6)** No changes or additional measures are required. The timing and duration of the proposed activities and geophysical survey methods are described in Sections 3.5 and 3.6 of the EP. Routine acoustic emissions are assessed in Section 6.8.3.
(7) Stated that limitations in available species, habitat and environmental data, including information on migratory species' spatio-temporal habitat use and interactions with industrial activities, make it difficult to assess potential impacts from noise, light and pollution on marine life. AMCS also stated that available information may be outdated, persistent knowledge gaps remain and the interacting cumulative pressures of climate change, industrial development, global shipping and fishing are poorly understood. AMCS noted that warming oceans may alter species distributions and food availability along migratory routes.	**(7)** Woodside considers that the range of available environmental information, including scientific literature, government datasets, protected-matters information, environmental studies, monitoring data, species-distribution information and project-specific investigations, provides an appropriate basis for identifying environmental receptors and assessing potential impact pathways and risks. Woodside considers that this information, together with recognised impact and risk assessment methodologies and the controls described in the EP, demonstrates that impacts and risks can be reduced to ALARP and acceptable levels.	**(7)** Woodside acknowledged that uncertainty exists in environmental assessments, that scientific understanding of marine ecosystems continues to evolve and that marine ecosystems are subject to natural and anthropogenic pressures. Woodside advised that the EPs were informed by available environmental information relevant to the proposed activities, including published scientific literature, government datasets, protected-matters information, environmental studies, monitoring data, species-distribution information and project-specific investigations. Woodside noted that long-running ecological monitoring has been undertaken at Scott Reef through the AIMS Scott Reef Research Program and that Woodside is undertaking long-term passive acoustic monitoring and ecological monitoring of productivity and prey availability. Woodside advised that	**(7)** No changes or additional measures are required. The description of the existing environment is covered in Section 4 of the EP. Potential impacts associated with routine acoustic emissions, routine light emissions and routine and non-routine discharges are assessed in Sections 6.8.3, 6.8.4 and 6.8.6, respectively.

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		this information is used with recognised impact and risk assessment methodologies to identify environmental receptors and assess potential impact pathways. Woodside further advised that the EPs demonstrate that impacts and risks can be reduced to ALARP and acceptable levels through the controls and management measures described in the EPs.	
(8) Cited Boisseau et al. (2026) regarding environmental performance of offshore petroleum activities in the Mediterranean Sea and recommended Woodside implements the study's recommendations to minimise impacts to threatened marine species and marine protected areas.	**(8)** Woodside does not agree that conclusions from activities undertaken in different environmental, regulatory and operational settings can be directly applied to the proposed GPGT survey activities. Woodside considers that the EP assesses potential impacts and risks based on the specific equipment, operational characteristics, receiving environment and environmental receptors relevant to the proposed activities, using relevant scientific literature, monitoring information, industry guidance and multiple lines of evidence.	**(8)** Woodside acknowledged that scientific studies on offshore activity performance may inform environmental risk management and control design. Woodside advised that conclusions from activities undertaken in different environmental, regulatory and operational settings cannot be directly applied to the proposed GPGT survey activities, which have been assessed based on the specific equipment, operational characteristics, receiving environment and environmental receptors relevant to the EP. Woodside further advised that continual improvement and consideration of emerging scientific information are important components of environmental management and that the assessment considered relevant scientific literature, environmental monitoring information, industry guidance and multiple lines of evidence. Woodside advised that the EPs demonstrate that impacts and risks can	**(8)** No changes or additional measures are required. The environmental impact and risk assessment methodology, including the assessment of ALARP and acceptability, is addressed in Section 2 of the EP. The impact and risk analysis and evaluation are assessed in Section 6, including routine acoustic emissions in Section 6.8.3. Implementation, monitoring, audit and review arrangements are addressed in Section 7.

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		be reduced to ALARP and acceptable levels through the controls and management measures described in the EP.	
(9) Stated concern regarding the contribution of fossil fuel production to climate change and associated downstream impacts on oceans and marine life, including ocean acidification, ocean warming, sea level rise and extreme weather events.	**(9)** Woodside notes AMCS's position.	**(9)** Woodside noted AMCS's position.	**(9)** No changes or additional measures are required.
Woodside has addressed claims or objections as noted above.	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, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.7.1 of the EP).	No changes or additional measures are required.

Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with AMCS 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 AMCS sufficient information to allow AMCS 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 April 2026. Woodside gave this information to AMCS on 28 April 2026, 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 Petroleum Activities Program, and proposed mitigation and management measures.
  - A timeframe for consultation and the provision of feedback.

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  - 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 regulation 25(4) of the Environment Regulations).
- On 28 May 2026 and 16 June 2026, AMCS shared its feedback, claims or objections regarding this activity, indicating the information provided was sufficient to enable AMCS to make an informed assessment of the possible consequences of the activity on its functions, interests or activities.
- In addition to the information in the Consultation Information Sheet, Woodside provided additional information to AMCS in response to AMCS's feedback (Woodside's email of 30 July 2026).

Reasonable Period

Woodside allowed AMCS a reasonable period for consultation in the preparation of the EP because:

- A consultation period was stated in the initial correspondence to AMCS 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 and Woodside allowed AMCS 30 days for consultation.
- Consultation for this EP commenced 5 months ago.
- In this context, Woodside allowed AMCS 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 AMCS is appropriate and adapted to the nature of interests of AMCS:

- 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 a targeted social media campaigns (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Between May and August 2026, Woodside held information stalls at community events in the Pilbara region to raise awareness of the EP and provide additional opportunities for feedback. These events were promoted in local newspapers and on social media.
- In the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, reminding AMCS 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:

- AMCS provided feedback or claims or objections regarding the adverse impact of the proposed activity to which this EP relates. 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 AMCS and has assessed the merits of each objection or claim (if any) 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 AMCS 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.

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4.10.2 Conservation Council of Western Australia (CCWA)

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed GPAP advising of the proposed activity (Record of Consultation, reference 6.1.7) and provided a Consultation Information Sheet, and a link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans: Information for the community*'.
- On 19 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).
- On 28 May 2026, CCWA emailed Woodside (SI Report A, reference 15.1). CCWA raised items **(1)** – **(37)**.
- On 30 July 2026, Woodside emailed CCWA (SI Report A, reference 15.2). Woodside responded to items **(1)** – **(37)**.

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
(1) Outlined CCWA's interests in relation to environmental protection, Scott Reef, marine species, climate change and industrial development, and stated that its interests may be affected by the proposed GPGT survey activities.	**(1)** Woodside understands CCWA's interests in relation to environmental protection, marine habitats, marine species, climate change and proposed industrial developments in Western Australia.	**(1)** Woodside noted CCWA's comments, including its stated interests.	**(1)** No changes or additional measures are required.
(2) Outlined CCWA's role, functions, interests and activities in relation to environmental protection, sustainability, climate change and conservation in WA, and stated that the Consultation Information Sheet did not provide sufficient information for CCWA to assess the possible consequences of the proposed GPGT survey activities on those functions, interests and activities.	**(2)** Woodside understands CCWA's purpose, role, functions, interests and activities and acknowledges the requirement under regulation 25(2) of the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Cth)* to provide sufficient information to allow an informed assessment of the possible consequences of the activity on the relevant person's functions, interests or activities. Woodside does not agree that the Consultation Information Sheets were	**(2)** Woodside noted CCWA's purpose, role, functions, interests and activities. Woodside disagreed that the Consultation Information Sheets were insufficient for CCWA to assess the possible consequences of the activity on its functions, interests and activities.	**(2)** No changes or additional measures are required.

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	insufficient for CCWA to make that assessment.		
(3) Stated that Woodside had not provided sufficient information to enable consultation to occur. CCWA stated that the consultation period should take account of the complexity and volume of information, CCWA's availability and accessibility considerations, and should support two-way communication, transparency, collaboration, inclusiveness and integrity.	**(3)** Woodside does not agree that insufficient information or an unreasonable period was provided for consultation. Woodside considers that CCWA was provided with sufficient information to make an informed assessment of the possible consequences of the activity on its functions, interests or activities and was allowed a reasonable period and opportunity to provide feedback. Woodside considered CCWA's correspondence and provided responses to the matters raised.	**(3)** Woodside advised that it was aware of the requirement to allow relevant persons a reasonable period for consultation. Woodside disagreed that the Consultation Information Sheets did not provide sufficient information to allow consultation to occur. Woodside confirmed that CCWA's feedback had been received and considered as part of the development of the EP.	**(3)** No changes or additional measures are required.
(4) Requested information in relation to a worst-case oil spill scenario.	**(4)** Woodside considers that the EP comprehensively identifies and assesses planned and unplanned impacts and risks associated with the proposed GPGT survey activities, including a worst-case credible spill scenario, and demonstrates that risks can be reduced to ALARP and acceptable levels.	**(4)** Woodside confirmed that planned and unplanned impacts and risks have been identified and assessed in the EP. Woodside advised that the assessment includes a worst-case credible spill scenario, modelled using conservative assumptions to define the EMBA and assess receptor exposure, with impacts evaluated against consequence criteria and reduced to ALARP and acceptable levels. Woodside also noted that the proposed GPGT survey activities do not involve hydrocarbon production, storage or transfer, and that the worst-case credible spill scenario is a Marine Gas Oil spill resulting from a vessel collision.	**(4)** No changes or additional measures are required. Unplanned activities, including an unplanned hydrocarbon release, are assessed in Section 6.9.2 of the EP.

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(5) Requested information on potential impacts and risks to Scott Reef Marine Park and other significant marine ecosystems, including from a worst-case oil spill.	**(5)** Woodside considers that the EP identifies Scott Reef Nature Reserve, surrounding habitats, protected areas, key ecological features and other significant marine receptors and assesses potential planned and unplanned impacts and risks to these receptors, including from the worst-case credible spill scenario. Woodside considers that the relevant risks are reduced to ALARP and acceptable levels.	**(5)** Woodside advised that the EP identifies Scott Reef Nature Reserve, surrounding habitats, protected areas, key ecological features and other significant marine receptors and assesses planned and unplanned impacts and risks to these receptors. Woodside noted that planned impacts from the GPGT survey activities are expected to be localised and temporary and that the worst-case credible spill scenario is an instantaneous 200 m^3 Marine Gas Oil release resulting from a vessel collision. Woodside advised that the associated risks are managed to ALARP and acceptable levels.	**(5)** No changes or additional measures are required. Unplanned activities, including an unplanned hydrocarbon release, are assessed in Section 6.9.2 of the EP.
(6) Requested information on potential impacts and risks to Sea Country and areas of Aboriginal cultural significance or heritage, including from a worst-case oil spill.	**(6)** Woodside considers that the EP identifies and assesses Sea Country values and Aboriginal cultural heritage, using information from Indigenous relevant persons and desktop review, and includes controls where required to manage potential impacts.	**(6)** Woodside confirmed that the EP identifies and assesses potential impacts and risks to Sea Country values and Aboriginal cultural heritage, using information from Indigenous relevant persons and desktop review. Woodside advised that controls are implemented where required, including spill response measures and relevant engagement to avoid potential impacts to cultural features and heritage values.	**(6)** No changes or additional measures are required. Cultural values and heritage are described in Section 4.9 of the EP. The cultural features and heritage values assessment is included in Section 6.11 of the EP.
(7) Requested information on the minimum and maximum expected operational duration of the proposed GPGT survey activities over the five-year EP term.	**(7)** Woodside acknowledges CCWA's interest in the duration of the proposed activities. The GPGT survey activities are planned to occur intermittently over the five-year EP term.	**(7)** Woodside confirmed that the GPGT survey activities will occur intermittently over the five-year EP term, typically in campaigns lasting 20 to 60 days, with up to 90 operational days per year and no fixed minimum total operational period.	**(7)** No changes or additional measures are required. The timing and duration of the proposed activities are described in Section 3.5 of the EP.

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(8) Requested information on potential impacts to species not listed in the Consultation Information Sheets.	**(8)** Woodside considers that the EP assesses relevant ecological receptors using both species-specific and habitat-based approaches, including where relevant to non-listed species and ecological communities.	**(8)** Woodside confirmed that environmental receptors are identified using species-specific and habitat-based approaches, which captures ecological communities and non-listed species through assessment of habitats, ecosystem processes and receptor groups.	**(8)** No changes or additional measures are required. The description of the existing environment is covered in Section 4 of the EP.
(9) Asked how environmental impacts from the proposed GPGT survey activities would be minimised.	**(9)** Woodside considers that the EP applies a risk-based process to identify, assess and manage planned and unplanned impacts, with controls selected in proportion to the nature and scale of the activities.	**(9)** Woodside advised that environmental impacts are minimised through a risk-based EP process that reduces impacts and risks to ALARP and acceptable levels. Woodside noted that the surveys are intermittent and localised, and that controls are selected using the hierarchy of controls, including elimination, substitution, engineering controls, administrative controls and emergency response planning.	**(9)** No changes or additional measures are required. Impact and risk assessment methodology, ALARP and acceptability are addressed in Section 2 and applied in Section 6 of the EP.
(10) Asked how geophysical surveys are considered non-intrusive.	**(10)** Woodside considers geophysical surveys to be non-intrusive because they use acoustic mapping and do not involve excavation, drilling or direct mechanical interaction with the seabed.	**(10)** Woodside advised that geophysical surveys use acoustic mapping and do not involve excavation, drilling or direct mechanical interaction with the seabed.	**(10)** No changes or additional measures are required. Geophysical survey methods and equipment are described in Section 3.6 of the EP.
(11) Requested information on the difference between the spatial footprint of geophysical surveys and seismic surveys.	**(11)** Woodside considers that GPGT geophysical surveys are materially different from seismic surveys, including in their purpose, acoustic characteristics, spatial extent and seabed-focused footprint.	**(11)** Woodside advised that GPGT geophysical surveys are used to characterise seabed and shallow sub-seabed features using short, directional acoustic pulses focused toward the seabed. Woodside noted that these surveys have a more limited spatial and acoustic footprint than seismic surveys,	**(11)** No changes or additional measures are required. Geophysical survey methods and routine acoustic emissions are described and assessed in Sections 3.6 and 6.8.3 of the EP, respectively.

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		which use higher-energy sources over broader areas to image deeper geological formations.	
(12) Requested information on the sound sources used to map geological layers and their estimated noise levels.	**(12)** Woodside has assessed that estimated noise levels for relevant geophysical survey techniques have been provided to support assessment of potential underwater noise impacts.	**(12)** Woodside provided estimated source sound-pressure levels, sound-exposure levels and dominant frequency ranges for the relevant geophysical survey techniques, including MBES, SSS, SBP and USBL positioning equipment.	**(12)** No changes or additional measures are required. Routine acoustic emissions are assessed in section 6.8.3 of the EP.
(13) Requested information on underwater noise management measures and their effectiveness.	**(13)** Woodside considers that the EP assesses relevant sound sources and applies proportionate mitigation and adaptive management measures to manage potential underwater noise impacts to marine fauna.	**(13)** Woodside advised that underwater noise is managed through a risk-based combination of assessment, mitigation and adaptive management measures. Woodside noted that measures include fauna observations, observation zones, vessel controls, trained observers, equipment maintenance and adaptive operational responses, and are selected to be proportionate to the activity type and risk profile.	**(13)** No changes or additional measures are required. Routine acoustic emissions are assessed in section 6.8.3 of the EP.
(14) Requested information on adaptive management measures during noise-generating activities.	**(14)** Woodside considers that adaptive management measures, including real-time observations and operational responses, are used to minimise potential impacts from noise-generating activities.	**(14)** Woodside advised that adaptive management includes real-time marine-fauna observations and modification or delay of activities where required. Measures include pre-start observations before activating geophysical equipment and, where the pygmy blue whale possible-foraging BIA may be ensonified, before commencing dynamic positioning for geotechnical drilling.	**(14)** No changes or additional measures are required. Routine acoustic emissions are assessed in section 6.8.3 of the EP
(15)	**(15)**	**(15)**	**(15)**

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Requested information on the noise levels and potential impacts of different geophysical survey equipment.	Woodside considers that the EP assesses relevant geophysical survey equipment sound sources and potential effects on marine fauna and benthic communities.	Woodside referred to the estimated noise levels provided for relevant geophysical equipment and advised that effects on cetaceans are expected to be localised, with temporary threshold shift highly unlikely. Woodside also advised that modelling indicates no impact to benthic invertebrates from Sub-bottom profiler, Multibeam echosounder or Side scan sonar sound levels.	No changes or additional measures are required. Routine acoustic emissions are assessed in section 6.8.3 of the EP.
(16) Requested information on EMBA modelling and modelled worst-case spill outcomes for Scott Reef, the Kimberley coast and fisheries, including who undertakes the modelling and its independence.	**(16)** Woodside considers that EMBA modelling uses recognised industry tools, specialists and conservative assumptions to assess potential exposure and inform impact assessment for relevant receptors and activities.	**(16)** Woodside advised that EMBA modelling was undertaken using recognised industry modelling tools, specialists and conservative assumptions. Woodside noted that the worst-case credible spill scenario is low likelihood, with modelling indicating limited-duration exposure at Scott Reef, no predicted contact with the Kimberley coastline, and potential fisheries impacts limited to temporary exclusion and short-term productivity effects.	**(16)** No changes or additional measures are required. Unplanned activities, including a unplanned hydrocarbon release, are assessed in Section 6.9.2 of the EP.
(17) Requested information on the impacts of geophysical and geotechnical surveys compared with seismic surveys.	**(17)** Woodside considers that GPGT activities have lower acoustic energy, a smaller spatial extent and a lower ecological risk profile than seismic survey activities.	**(17)** Woodside advised that geophysical and geotechnical surveys have lower acoustic energy, a smaller spatial extent and lower ecological risk than seismic survey activities.	**(17)** No changes or additional measures are required. Routine acoustic emissions are assessed in section 6.8.3 of the EP.
(18) Requested information on the expected displacement of commercial fishing activities.	**(18)** Woodside has assessed that any displacement of commercial fisheries would be temporary and limited to the	**(18)** Woodside confirmed that any displacement of commercial fisheries would be temporary, localised and	**(18)** No changes or additional measures are required.

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	active survey area during survey operations.	limited to the active survey area during survey operations.	Potential interaction with commercial fisheries and other marine users is assessed in Section 6.8.1 of the EP.
(19) Requested information on the composition of cuttings and fluids discharged during geotechnical surveys.	**(19)** Woodside considers that geotechnical survey cuttings and fluids are expected to be limited to natural sediments, rock, seawater and, where required, low-toxicity additives assessed through Woodside's chemical assessment process.	**(19)** Woodside advised that geotechnical cuttings are expected to comprise natural seabed and sub-seabed sediments or rock, with fluids primarily comprising seawater and, where required, low-toxicity additives. Woodside noted that potential impacts from discharges are assessed as localised and temporary.	**(19)** No changes or additional measures are required. Routine and non-routine discharges are addressed in Section 6.8.6 of the EP.
(20) Requested information on the potential impacts of geotechnical survey activities.	**(20)** Woodside has assessed that potential impacts from geotechnical survey activities are localised, temporary and appropriately assessed in the EP.	**(20)** Woodside advised that geotechnical surveys may result in localised and temporary seabed disturbance, changes to water and sediment quality, benthic habitat disturbance and underwater noise. Woodside noted these impacts are expected to be highly localised, temporary and not result in lasting effects to seabed or benthic communities.	**(20)** No changes or additional measures are required. Disturbance to the seabed from geotechnical and geophysical surveys is addressed in section 6.8.2 of the EP. Routine and non-routine discharges are addressed in Section 6.8.6 of the EP.
(21) Asked how disturbance to marine fauna from underwater noise would be avoided.	**(21)** Woodside has assessed that controls for underwater noise impacts to marine fauna have been selected based on the activity risk profile and sensitivity of the receiving environment.	**(21)** Woodside advised that routine acoustic emissions will be managed through controls selected in accordance with ALARP and acceptability criteria. Controls include pre-start observations by trained personnel before activating geophysical equipment and night-time observations using a night-vision device. Where activities may ensonify the pygmy blue whale possible-foraging BIA, additional controls include seasonal	**(21)** No changes or additional measures are required. Routine acoustic emissions are assessed in Section 6.8.3 of the EP.

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		avoidance for geotechnical drilling where relevant, pre-start observations by a qualified marine fauna observer before commencing dynamic positioning for geotechnical drilling, and a shutdown zone for SBP activities.	
(22) Requested information on expected underwater noise levels and remaining uncertainty regarding potential underwater noise impacts.	**(22)** Woodside has assessed that expected underwater noise levels and potential effects are assessed using source-specific information, modelling and conservative thresholds.	**(22)** Woodside advised that underwater noise levels vary by source, vessel type, equipment settings, water depth and distance from the source, and that exposure above behavioural thresholds is spatially limited. Woodside noted that uncertainty in species-specific responses is addressed through conservative thresholds, modelling and precautionary controls.	**(22)** No changes or additional measures are required. Routine acoustic emissions are assessed in Section 6.8.3 of the EP.
(23) Requested information on behavioural changes, potential injury and long-term impacts to marine fauna from acoustic emissions.	**(23)** Woodside considers that the EP assesses behavioural disturbance, displacement and hearing-related injury pathways associated with acoustic emissions. Woodside considers potential effects from the proposed GPGT survey activities to be localised and temporary, with injury unlikely and no long-term impacts expected.	**(23)** Woodside advised that behavioural responses to acoustic emissions may include avoidance, displacement or temporary cessation of feeding, depending on factors such as species, received sound level, distance from source and exposure duration. Woodside noted that potential injury pathways, including temporary threshold shift (TTS) and permanent threshold shift (PTS), are assessed separately from behavioural disturbance, but injury is unlikely because animals are not expected to remain close enough to sound sources for long enough to exceed relevant thresholds. Woodside advised that acoustic effects are expected to be localised and temporary, with no lasting impacts on	**(23)** No changes or additional measures are required. Routine acoustic emissions are assessed in Section 6.8.3 of the EP.

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		protected species, ecosystems or ecological functions.	
(24) Asked how Woodside can guarantee pygmy blue whales will not be foraging during planned activities.	**(24)** Woodside acknowledges that species absence during planned activities cannot be guaranteed. Woodside considers that potential risks to pygmy blue whales are managed through schedule flexibility, monitoring and operational controls.	**(24)** Woodside clarified that it cannot guarantee pygmy blue whales will be absent during planned activities. Woodside advised that risks are managed through schedule flexibility, pre-start observations, limiting relevant acoustic activities within the pygmy blue whale possible-foraging BIA where possible during periods when pygmy blue whales are likely to be foraging, and compliance with applicable cetacean interaction requirements, including approach-distance and vessel-speed requirements.	**(24)** No changes or additional measures are required. Potential interactions with marine fauna, are addressed in Section 6.9.3 of the EP.
(25) Requested information on chemicals that may be present in non-routine discharges and their potential impacts.	**(25)** Woodside considers that potential chemicals and impacts associated with non-routine discharges are assessed and managed through Woodside's chemical assessment process.	**(25)** Woodside advised that non-routine discharges may include small volumes of hydrocarbons, operational fluids or hydraulic fluid, with chemicals selected to minimise practicable environmental impacts and risks. Woodside noted that potential impacts are expected to be localised and short term, primarily involving temporary reduced water quality near the release.	**(25)** No changes or additional measures are required. Chemical selection and unplanned discharges: deck and subsea spills from geotechnical and geophysical equipment are addressed in Sections 7.2.1 and 6.9.6 of the EP, respectively.
(26) Requested information on the composition of drill cuttings and drilling fluids discharged during geotechnical surveys, including potential toxic additives.	**(26)** Woodside considers that drilling fluids and additives are assessed and managed through Woodside's chemical assessment process, with chemicals selected to minimise practicable environmental impacts and risks subject to technical constraints.	**(26)** Woodside advised that drilling fluids comprise water-based systems with regulated additives, and that all chemicals are selected to minimise practicable environmental impacts and risks, subject to technical constraints,	**(26)** No changes or additional measures are required. Routine and non-routine discharges are addressed in Section 6.8.6 of the EP.

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		and approved through Woodside's chemical assessment process.	
(27) Asked how impacts from light emissions would be avoided.	**(27)** Woodside acknowledges that light emissions cannot be avoided where required for navigation, safe operations, crew safety and vessel visibility. Woodside considers that light emission impacts are managed through minimising non-essential external lighting and implementing relevant seabird and turtle-related controls.	**(27)** Woodside clarified that light emissions cannot be avoided where lighting is required for navigation, safe night-time operations, crew safety and vessel visibility. Woodside advised that impacts will be managed by minimising non-essential external lighting, implementing the Woodside Offshore Seabird Management Plan and applying relevant crew-training and light-reduction measures when operating within 20 km of Sandy Islet during green turtle nesting and peak hatchling emergence periods.	**(27)** No changes or additional measures are required. Routine light emissions are assessed in Section 6.8.4. of the EP.
(28) Requested information on the procedure following a marine fauna strike.	**(28)** Woodside considers that accidental vessel collision with threatened or migratory marine fauna is identified as a potential unplanned interaction in the EP, with incident reporting and investigation requirements in place to inform corrective actions.	**(28)** Woodside advised that accidental collision between survey vessels and threatened or migratory marine fauna is identified as a potential unplanned interaction in the EP. Woodside noted that any threatened or migratory marine fauna strike would be reported to relevant authorities in accordance with incident reporting requirements, with investigation undertaken to inform corrective actions.	**(28)** No changes or additional measures are required. Section 7.11.4 addresses external incident reporting requirements (Table 7-7).
(29) Requested information on objects or equipment that may be dropped or lost during planned activities.	**(29)** Woodside considers that potential dropped objects and lost equipment are identified and assessed in the EP, with impacts expected to be localised and managed through procedural controls,	**(29)** Woodside advised that objects or equipment may be dropped or lost during vessel deck activities or deployment, operation and retrieval of survey equipment.	**(29)** No changes or additional measures are required. Dropped objects and loss of geophysical or geotechnical equipment are assessed in Section 6.9.4 of the EP.

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	cultural heritage assessment and recovery where safe and practicable.	Woodside noted that potential impacts may include localised disturbance to benthic habitat and, where relevant, cultural heritage, and that dropped objects and equipment will be recovered where safe and practicable.	
(30) Requested information on the types, volumes and chemicals associated with accidental discharges from survey vessels, and potential impacts from changes to water quality.	**(30)** Woodside considers that potential accidental discharges and associated water quality impacts are assessed and managed in the EP, with impacts expected to be localised, short term and limited to the immediate release location.	**(30)** Woodside advised that non-routine discharges may include small volumes of hydrocarbons, operational fluids or hydraulic fluid, with chemicals selected to minimise practicable environmental impacts and risks through Woodside's chemical assessment process. Woodside noted that potential impacts are expected to be localised and short term, primarily involving temporary reduced water quality and potential contact with marine fauna near the release location.	**(30)** No changes or additional measures are required. Unplanned deck and subsea spills from geotechnical and geophysical equipment are addressed in Section 6.9.6 of the EP.
(31) Requested information on cumulative impacts of the proposed GPGT survey activities with existing and proposed nearby activities, and cumulative impacts associated with broader upstream and downstream Browse Project activities.	**(31)** Woodside considers that the EP assesses cumulative impacts relevant to the proposed GPGT survey activities, including interaction with other activities where there is realistic potential for temporal and spatial overlap. Woodside maintains that broader upstream and downstream activities, including gas production, pipeline operation and onshore processing, are outside the scope of the EP and are subject to separate environmental approvals and assessments.	**(31)** Woodside advised that the proposed GPGT surveys are discrete, short-term and localised data acquisition activities addressed through separate EPs. Woodside noted that the EP considers cumulative impacts where there is realistic potential for overlapping temporal and spatial effects, and that potential cumulative impacts are expected to be limited and temporary. Woodside clarified that broader upstream and downstream activities are outside the scope of the EP and are subject to separate environmental approvals and assessments.	**(31)** No changes or additional measures are required. Cumulative impacts relevant to the proposed GPGT survey activities are considered within the impact and risk assessment sections of Section 6.8 of the EP.

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(32) Requested information demonstrating that environmental impacts and risks of the proposed activities will be reduced to ALARP, including through consideration of control measures.	**(32)** Woodside considers that the EP demonstrates impacts and risks are reduced to ALARP through structured hazard and impact identification, evaluation of proportionate control measures, and application of controls consistent with industry practice and regulatory expectations.	**(32)** Woodside advised that the EP demonstrates impacts and risks are reduced to ALARP through structured risk assessment processes, evaluation of control measures proportionate to risk, and application of controls consistent with industry practice and regulatory expectations.	**(32)** No changes or additional measures are required. The ALARP assessment methodology is addressed in Section 2, and ALARP demonstrations are included in the planned and unplanned impact and risk assessment sections of Section 6 of the EP.
(33) Requested information demonstrating that environmental impacts and risks of the proposed activities will be of an acceptable level.	**(33)** Woodside considers that residual impacts and risks are evaluated against defined consequence and acceptability criteria, and that the EP demonstrates impacts and risks will be of an acceptable level.	**(33)** Woodside advised that residual impacts and risks are evaluated against defined consequence criteria and demonstrated to be of an acceptable level, with no significant or long-term impacts to environmental receptors predicted.	**(33)** No changes or additional measures are required. The ALARP assessment methodology is addressed in Section 2, and ALARP demonstrations are included in the planned and unplanned impact and risk assessment sections of Section 6 of the EP.
(34) Requested information on the environmental performance outcomes, environmental performance standards and measurement criteria adopted for the proposed GPGT survey activities.	**(34)** Woodside confirms that the EP includes environmental performance outcomes, environmental performance standards and measurement criteria for each credible impact and risk associated with the proposed GPGT survey activities.	**(34)** Woodside advised that the EP includes activity-specific environmental performance outcomes, environmental performance standards and measurement criteria for each evaluated impact and risk. Woodside noted these are linked to controls adopted through the ENVID and ALARP process and provide the basis for monitoring, auditing and measuring whether impacts and risks are managed to ALARP and acceptable levels.	**(33)** No changes or additional measures are required. Environmental performance outcomes, environmental performance standards and measurement criteria are included in the planned and unplanned impact and risk assessment sections of Section 6 of the EP.
(35) Requested information on the implementation strategy and monitoring, recording and reporting arrangements	**(35)** Woodside confirms that the EP includes an implementation strategy that sets out roles and responsibilities, monitoring,	**(35)** Woodside advised that the EP includes an implementation strategy outlining roles and responsibilities, monitoring,	**(35)** No changes or additional measures are required.

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for managing environmental impacts and risks associated with the proposed GPGT survey activities.	recording and reporting requirements, and audit and review processes to support effective implementation of environmental controls and ongoing compliance.	recording and reporting requirements, and audit and review processes. Woodside noted these arrangements support effective implementation of environmental controls and ongoing compliance.	The implementation strategy, including monitoring, audit and review arrangements, is addressed in Section 7 of the EP.
(36) Stated that access to a draft EP would assist CCWA to make an informed assessment of the proposed activities and associated environmental impacts and risks.	**(36)** Woodside does not provide EP drafts during the development of an EP. The Consultation Information Sheet provided to CCWA provided sufficient information for CCWA to make an informed assessment of the potential impacts of the activity and provide feedback during consultation.	**(36)** Woodside advised that the EP will be made available on NOPSEMA's website following submission.	**(36)** No changes or additional measures are required.
(37) Stated that the EP should not be accepted until the requirements of regulation 25 of the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Cth)* had been met.	**(37)** Woodside notes CCWA's position and does not agree that the EP fails to meet the applicable consultation or acceptance requirements.	**(37)** Woodside noted CCWA's position. Woodside advised that it does not agree that the Commonwealth EP has not met the criteria for acceptance under the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Cth).*	**(37)** No changes or additional measures are required.
Woodside has addressed claims or objections as noted above.	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, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.7.1 of the EP).	No changes or additional 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 CCWA 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 CCWA sufficient information to allow CCWA 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 April 2026. Woodside gave this information to CCWA on 28 April 2026, 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 Petroleum Activities Program, 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 regulation 25(4) of the Environment Regulations).
- On 28 May 2026, CCWA shared its feedback, claims or objections regarding this activity, indicating the information provided was sufficient to enable CCWA to make an informed assessment of the possible consequences of the activity on its functions, interests or activities.
- In addition to the information in the Consultation Information Sheet, Woodside provided additional information to CCWA in response to CCWA's feedback (Woodside's email of 30 July 2026).

Reasonable Period

Woodside allowed CCWA a reasonable period for consultation in the preparation of the EP because:

- A consultation period was stated in the initial correspondence to CCWA 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 and Woodside allowed CCWA 30 days for consultation.
- Consultation for this EP commenced 5 months ago.
- In this context, Woodside allowed CCWA 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 CCWA is appropriate and adapted to the nature of interests of CCWA:

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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 a targeted social media campaigns (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Between May and August 2026, Woodside held information stalls at community events in the Pilbara region to raise awareness of the EP and provide additional opportunities for feedback. These events were promoted in local newspapers and on social media.
- In the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, reminding CCWA 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:

- CCWA provided feedback or claims or objections regarding the adverse impact of the proposed activity to which this EP relates. 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 CCWA and has assessed the merits of each objection or claim (if any) 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 CCWA 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.

4.10.3 Greenpeace Australia Pacific (GPAP)

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed GPAP advising of the proposed activity (Record of Consultation, reference 6.1.7) and provided a Consultation Information Sheet, and a link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans: Information for the community*'.
- On 19 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).
- On 28 May 2026, GPAP emailed Woodside and raised item **(1)** (SI Report A, reference 16.1).
- On 28 May 2026, Woodside emailed GPAP and responded to item **(1)** (SI Report A, reference 16.2).
- On 18 June 2026, GPAP emailed Woodside. GPAP raised items **(2) – (21)** (SI Report A, reference 16.3).
- On 30 July 2026, Woodside emailed GPAP. Woodside responded to items **(2)** – **(21)** (SI Report A, reference 16.4).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
(1)	**(1)**	**(1)**	**(1)**

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Requested an extension of time to provide feedback.	Woodside considered GPAP's request for an extension and agreed to provide additional time.	Woodside noted GPAP's request and granted an extension to the consultation period.	No changes or additional measures are required.
(2) Stated that the complexity and number of proposed EPs, the resources required to assess them and the limited resources available to environmental advocacy organisations affected GPAP's ability to participate comprehensively in consultation. GPAP questioned whether sufficient information and a reasonable period had been provided and whether the consultation process achieved its intended purpose.	**(2)** Woodside does not agree that GPAP was not provided with sufficient information or a reasonable period to participate in consultation. Woodside considers that sufficient information was provided to enable GPAP to make an informed assessment of the possible consequences of the activity on its functions, interests or activities. Woodside also granted GPAP's request for additional time to provide feedback and considered the substantive matters raised in its correspondence.	**(2)** Woodside advised that it did not agree with GPAP's contention that sufficient information had not been provided. Woodside noted that GPAP had been provided with consultation information concerning the proposed activities, receiving environment, potential impacts and risks, and proposed management measures. Woodside also granted GPAP additional time to provide feedback and assessed the merits of relevant objections and claims raised in GPAP's correspondence.	**(2)** No changes or additional measures are required.
(3) Provided an overview of GPAP and its core focus areas.	**(3)** Woodside notes the items raised and the organisation's focus areas as stated in its correspondence.	**(3)** Woodside noted the items raised by GPAP.	**(3)** No changes or additional measures are required.
(4) Stated concern that the EP does not adequately assess potential impacts to Scott Reef and its ecological values, including pygmy blue whales and nesting turtles, due to an asserted lack of site-specific acoustic modelling, ecological baseline information and cumulative impact assessment. GPAP further stated that acoustic survey activities could cause catastrophic and cascading harm to marine ecosystems.	**(4)** Woodside considers that the EP identifies Scott Reef Nature Reserve, surrounding habitats, protected areas and key ecological features as important environmental receptors and assesses potential planned and unplanned impacts and risks to these receptors. Woodside does not agree that the proposed GPGT survey activities would cause catastrophic or cascading harm to marine ecosystems and considers that relevant impacts and risks can be reduced to ALARP and acceptable	**(4)** Woodside advised that the EP identifies Scott Reef Nature Reserve and surrounding habitats, protected areas and key ecological features as important environmental receptors and assesses planned and unplanned impacts and risks to these receptors. Woodside confirmed that underwater acoustic modelling of vessel noise has been undertaken and noted that vessel noise is the dominant noise source, with	**(4)** No changes or additional measures are required. Scott Reef Nature Reserve, relevant protected areas, key ecological features and protected species are described in Sections 4.6 to 4.8 of the EP. Routine acoustic emissions are assessed in Section 6.8.3 of the EP. Unplanned impacts and risks are assessed in Sections 6.9 of the EP.

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	levels through the controls described in the EP.	equipment-related noise contributing a smaller and more localised component. Woodside disagreed that the proposed activities would cause catastrophic or cascading harm to marine ecosystems.	
(5) Stated its general objection to new oil and gas projects and its support for the phase-out of fossil fuel production and operations.	**(5)** Woodside notes GPAP's position.	**(5)** Woodside noted GPAP's position.	**(5)** No changes or additional measures are required.
(6) Identified Scott Reef's ecological significance and protected status, and stated that the Operational Area overlaps key ecological features and biologically important areas (BIA) for pygmy blue whales, green turtles and hawksbill turtles.	**(6)** Woodside notes GPAP's comments regarding the ecological significance and protected status of Scott Reef and the identified key ecological features and BIAs. Woodside is aware Scott Reef is a Commonwealth Nature Reserve.	**(6)** Woodside advised that it is aware of Scott Reef's designation as a Commonwealth Nature Reserve and noted GPAP's comments regarding the identified key ecological features and BIAs.	**(6)** No changes or additional measures are required. Protected species and BIAs, key ecological features and protected areas relevant to the proposed activities are described in Sections 4.6 to 4.9 of the EP.
(7) Described Scott Reef and Seringapatam Reef as unique atoll-form reef systems supporting high biodiversity, including species not yet formally described and species with limited regional distributions.	**(7)** Woodside acknowledges the ecological significance of Scott Reef and Seringapatam Reef. Woodside considers them to be among a limited number of remote, oceanic, atoll-form or atoll-like reef systems in Australian waters.	**(7)** Woodside advised that Scott Reef and Seringapatam Reef are among a limited number of remote, oceanic, atoll-form or atoll-like reef systems in Australian waters, noting other examples including Rowley Shoals, Ashmore Reef, and Elizabeth and Middleton Reefs.	**(7)** No changes or additional measures are required. Scott Reef, Seringapatam Reef and relevant reef habitats, biological communities and key ecological features are described in Sections 4.5, 4.7 and 4.8 of the EP.
(8) In regard to the wider Browse to NWS Project, GPAP stated independent ecological analysis found that Scott Reef supports internationally significant migratory species, including pygmy blue whales, and that the proposed project activities risk breaching Australia's	**(8)** Woodside acknowledges the ecological significance of Scott Reef and the broader region, including the presence of migratory species such as pygmy blue whales. Woodside does not agree that the proposed GPGT survey activities would	**(8)** Woodside acknowledged the ecological significance of Scott Reef and the broader region, including the presence of migratory species such as pygmy blue whales. Woodside advised that it does not agree the activities proposed under the EP	**(8)** No changes or additional measures are required. Protected species, including pygmy blue whales, and relevant BIAs are described in Section 4.6 of the EP.

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international biodiversity and migratory species obligations.	result in a breach of Australia's international biodiversity or migratory species obligations and considers that the EP assesses and manages impacts and risks to relevant protected species and environmental values in accordance with applicable Australian legislative and regulatory requirements. Matters relating to the broader Browse to NWS Project are outside the scope of this EP.	would breach Australia's international biodiversity or migratory species obligations and noted that the EP has been prepared in accordance with applicable Australian legislative and regulatory requirements. Woodside clarified that matters relating to the broader Browse to NWS Project are outside the scope of this EP.	
(9) Stated that the characterisation of acoustic impacts from GPGT survey equipment as localised, temporary and unlikely to result in lasting effects is not supported by evidence or site-specific data.	**(9)** Woodside considers that potential impacts from the proposed GPGT survey equipment are primarily limited to localised and temporary behavioural disturbance, with physiological auditory effects expected to occur over small and predictable ranges. Woodside has assessed that additional equipment-specific modelling is not required because vessel noise is the dominant sound source and equipment-related noise is comparatively smaller and more localised.	**(9)** Woodside advised that underwater acoustic modelling has been undertaken for vessel noise scenarios and documented in the EP. Woodside noted that vessel noise is the dominant sound source, while equipment-related noise is comparatively smaller and more localised. Woodside further advised that MBES and SSS produce high-frequency, directional sound that attenuates rapidly, while detectable SBP emissions are low-power, intermittent, short-pulse and highly directional, with potential impacts expected to be localised and short-range.	**(9)** No changes or additional measures are required. Geophysical survey equipment is described in Section 3.6 of the EP. Routine acoustic emissions are assessed in Section 6.8.3 of the EP.
(10) Stated that baseline ecological surveys for Scott Reef and the Operational Area have not been completed or referenced, and that the environmental information is not available to support the impact assessment.	**(10)** Woodside considers that the range of available environmental information, including published literature, government datasets, protected matters information, environmental studies and long-term monitoring at Scott Reef,	**(10)** Woodside advised that the EP is informed by a broad range of available environmental information, including published literature, government datasets, protected matters information,	**(10)** No changes or additional measures are required. The description of the existing environment is covered in Section 4 of the EP.

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	provides an appropriate basis for assessing potential impacts and risks associated with the proposed activities.	environmental studies and knowledge of the receiving environment. Woodside also noted that long-running monitoring programs, including the AIMS Scott Reef Research Program and ongoing acoustic and ecological monitoring, provide a strong basis for the impact assessments in the EP.	Routine acoustic emissions are assessed in Section 6.8.3 of the EP.
(11) Stated that site-specific acoustic modelling has not been undertaken for proposed geophysical survey equipment and that ALARP cannot be demonstrated.	**(11)** Woodside has assessed that vessel noise is the dominant sound source and that equipment-related acoustic emissions are smaller, intermittent, more localised and predictable based on known equipment specifications and previous activities. Potential effects are expected to be primarily limited to temporary behavioural disturbance, with physiological auditory effects occurring over small and predictable ranges.	**(11)** Woodside confirmed that underwater acoustic modelling of vessel noise sources has been undertaken to inform the EP. Woodside advised that the acoustic characteristics of the proposed survey equipment are well understood and predictable, and that equipment-related noise contributes a smaller, intermittent and more localised component to the overall sound field than vessel noise. Woodside further advised that additional equipment-specific or more complex acoustic modelling is not considered necessary because the proposed GPGT activities do not involve high-intensity, large-scale or impulsive sound fields, or a credible pathway for accumulated exposure leading to injury.	**(11)** No changes or additional measures are required. Geophysical survey equipment is described in Section 3.6 of the EP. Routine acoustic emissions are assessed in Section 6.8.3 of the EP.
(12) Stated that the proposed underwater noise controls are not adequately tailored to near Scott Reef, and questioned the effectiveness of visual observations.	**(12)** Woodside has assessed that the controls are proportionate to the potential impacts and risks to marine fauna and appropriately account for BIAs and the potential presence of sensitive species, including pygmy blue whales.	**(12)** Woodside advised that the EP includes observation-based controls, including trained crew to identify and manage marine fauna interactions and a qualified marine fauna observer for geotechnical drilling activities.	**(12)** No changes or additional measures are required. Pygmy blue whale BIA and relevant protected species are described in Section 4.6 of the EP.

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	Woodside considers that activity-specific observation, timing and operational controls are appropriate where the relevant environmental and operational prerequisites apply.	For activities that may ensonify the pygmy blue whale possible foraging BIA and require the use of dynamic positioning thrusters, a 30-minute pre-start observation period will apply out to the modelled 3.4 km behavioural response threshold. Woodside further advised that, where possible, activities with potential acoustic impacts will be limited within the possible foraging BIA during times when pygmy blue whales are likely to be foraging, including an avoidance period for geotechnical drilling activities. Woodside also noted that ongoing acoustic and ecological monitoring is being undertaken at Scott Reef.	Routine acoustic emissions are assessed in Section 6.8.3 of the EP.
(13) Cited reported impacts from marine seismic surveys on commercial fishing and NOPSEMA's decision on the Regia 3D Marine Seismic Survey.	**(13)** Woodside does not agree that the studies cited by GPAP or NOPSEMA's decision on the Regia 3D Marine Seismic Survey demonstrate that impacts and risks from the proposed GPGT survey activities cannot be reduced to ALARP and acceptable levels. Woodside considers that the proposed GPGT survey activities are not analogous to the referenced marine seismic survey.	**(13)** Woodside advised that it does not agree the cited studies or NOPSEMA's decision on the Regia 3D Marine Seismic Survey demonstrate that impacts and risks from the proposed GPGT survey activities cannot be reduced to ALARP and acceptable levels. Woodside clarified that the proposed activities are geophysical and geotechnical survey activities and are not analogous to the referenced marine seismic survey.	**(13)** No changes or additional measures are required.
(14) Stated that the proposed activities raise potential risks including underwater noise, light emissions, habitat and seabed disturbance, and cumulative	**(14)** Woodside has assessed that the EP addresses impacts and risks associated with underwater acoustic emissions, light emissions, habitat and seabed	**(14)** Woodside advised that the EP addresses impacts and risks associated with underwater acoustic emissions, light emissions, habitat and seabed	**(14)** No changes or additional measures are required. Potential impacts and risks associated with seabed disturbance, routine

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impacts associated with other offshore activities.	disturbance, and potential cumulative impacts where there is temporal and spatial overlap with other activities.	disturbance, and potential cumulative impacts where there is temporal and spatial overlap with other activities.	acoustic emissions and routine light emissions are assessed in Sections 6.8.2, 6.8.3 and 6.8.4 of the EP, respectively.
(15) Stated that potential impacts include habitat damage, smothering of benthic habitats, increased turbidity and sedimentation, behavioural disruption, disorientation, bioaccumulation of toxic substances, injury and mortality.	**(15)** Woodside considers that the EP addresses risks with the potential to impact relevant receptors, including marine habitats, benthic communities, marine fauna and protected species. Woodside considers that relevant impact pathways are assessed and subject to controls and management measures to avoid or minimise impacts and reduce risks to ALARP and acceptable levels.	**(15)** Woodside advised that the EP addresses risks with the potential to impact marine habitats, benthic communities, marine fauna and protected species. Woodside further advised that relevant impact pathways, including underwater noise, vessel presence, seabed interaction, discharges and accidental events where applicable, are assessed based on the nature, scale, duration and location of the activities, with controls and management measures developed to avoid or minimise impacts and reduce risks to ALARP and acceptable levels.	**(15)** No changes or additional measures are required. Potential impacts associated with seabed disturbance, routine acoustic emissions, routine light emissions and routine and non-routine discharges are assessed in Sections 6.8.2, 6.8.3, 6.8.4 and 6.8.6 of the EP, respectively. Potential unplanned impacts and risks are assessed in Sections 6.9 of the EP.
(16) Stated concern regarding the cumulative acoustic impacts of GPGT survey activities near Scott Reef.	**(16)** Woodside considers that the proposed GPGT survey activities are not equivalent to conventional marine seismic surveys, as they are lower intensity, more localised and more temporary in nature. Woodside considers that noise-generating activities are unlikely to occur continuously throughout each survey period and that the EP conservatively assesses repeated, recurring and potential cumulative impacts where relevant.	**(16)** Woodside advised that the proposed GPGT survey activities are lower intensity, more localised and more temporary than conventional marine seismic surveys. Woodside further advised that, while activities may occur over the five-year EP term, noise-generating activities are unlikely to operate continuously throughout each survey period due to operational pauses, downtime and scheduling considerations. The EP assesses potential activities conservatively, including repeated,	**(16)** No changes or additional measures are required. The timing and duration of the proposed activities are described in Section 3.5 of the EP. Routine acoustic emissions are assessed in Section 6.8.3 of the EP. Potential cumulative impacts are considered within the relevant impact and risk assessments in Section 6 of the EP.

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		recurring and cumulative impacts where relevant.	
(17) Stated that the proposed geophysical survey equipment may generate underwater acoustic emissions capable of impacting marine fauna and that these risks should be characterised and managed in accordance with the precautionary principle and ALARP framework.	**(17)** Woodside considers that the acoustic characteristics and potential impacts and risks of the proposed geophysical survey equipment are appropriately described and assessed in the EP. Woodside considers that GPGT equipment differs from conventional seismic survey sources in its acoustic energy, directionality, penetration depth and spatial extent, and that controls have been selected according to the sensitivity of the receiving environment and in accordance with ALARP and acceptability criteria.	**(17)** Woodside advised that MBES and SSS use short, high-frequency, directional pulses focused toward the seabed, while SBP systems are used for shallow sub-bottom profiling and have a more limited penetration depth than conventional seismic survey methods. Woodside advised that these sources differ from those with sources used by seismic surveys over broader areas to image deeper geological formations. Woodside further advised that the EP assesses the potential impacts and risks associated with predicted acoustic emissions and includes controls selected according to the sensitivity of the receiving environment and in accordance with ALARP and acceptability criteria.	**(17)** No changes or additional measures are required. Routine acoustic emissions are assessed in Section 6.8.3 of the EP.
(18) Cited studies on potential effects of marine seismic surveys on commercial fish catch rates, zooplankton and krill, cetaceans, reef-associated invertebrates and coral communities. GPAP stated that these findings indicate potential impacts to marine ecosystems and pygmy blue whale prey availability at Scott Reef.	**(18)** Woodside acknowledges that the cited studies may inform understanding of potential effects from marine seismic surveys but does not agree that their findings can be directly applied to the proposed GPGT survey activities without considering differences in activity type, acoustic source characteristics, receiving environment and receptor ecology. Woodside considers that the EP assesses underwater acoustic emissions and seabed disturbance as relevant	**(18)** Woodside acknowledged the studies cited by GPAP regarding potential effects of marine seismic surveys on commercial fisheries, zooplankton, krill, cetaceans and reef-associated fauna. Woodside advised that caution is required when applying these findings to the proposed GPGT survey activities because the cited studies principally relate to high-energy seismic airgun surveys, which differ from the proposed MBES, SSS and SBP equipment in source characteristics, operating	**(18)** No changes or additional measures are required. Routine acoustic emissions are assessed in Section 6.8.3 of the EP.

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	impact pathways, including potential effects on planktonic communities, benthic invertebrates, coral communities, marine fauna and key ecological features. Woodside does not agree that reef-associated invertebrates or coral communities have been excluded from assessment in the EP.	frequencies, source levels and acoustic footprints. Woodside further advised that the EP assesses potential effects of underwater acoustic emissions and seabed disturbance on habitats and ecosystems, including planktonic communities, benthic invertebrates, coral communities and key ecological features. Woodside also noted that long-term ecological and acoustic monitoring is being undertaken at Scott Reef to improve understanding of pygmy blue whale presence, prey availability and the relationship between prey occurrence and whale activity.	
(19) Cited NOPSEMA's decision on the Regia 3D Marine Seismic Survey and stated that the same precautionary standard should be applied to the proposed activities.	**(19)** Woodside does not agree that NOPSEMA's decision on the Regia 3D Marine Seismic Survey demonstrates that impacts and risks associated with the proposed GPGT survey activities cannot be reduced to ALARP and acceptable levels. Woodside considers that the proposed GPGT survey activities are not analogous to the referenced marine seismic survey.	**(19)** Woodside advised that it does not agree NOPSEMA's decision on the Regia 3D Marine Seismic Survey demonstrates that impacts and risks associated with the proposed GPGT survey activities cannot be reduced to ALARP and acceptable levels. Woodside clarified that the proposed activities are GPGT activities and are not analogous to the referenced marine seismic survey.	**(19)** No changes or additional measures are required.
(20) Objected to the EP and requested that NOPSEMA withhold acceptance.	**(20)** Woodside notes GPAP's position and does not agree that the EP fails to meet the applicable acceptance criteria.	**(20)** Woodside noted GPAP's objection and request that NOPSEMA withhold acceptance. Woodside advised that it does not agree that the EP has not met the criteria for acceptance under the *Offshore Petroleum and Greenhouse Gas*	**(20)** No changes or additional measures are required.

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		Storage (Environment) Regulations 2023 (Cth).	
(21) Stated its objection to the proposed activities.	**(21)** Woodside notes GPAP's position.	**(21)** Woodside noted GPAP's position.	**(21)** No changes or additional measures are required.
Woodside has addressed claims or objections as noted above.	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, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.7.1 of the EP).	No changes or additional measures are required.

Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with GPAP 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 GPAP sufficient information to allow GPAP 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 April 2026. Woodside gave this information to GPAP on 28 April 2026, 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 Petroleum Activities Program, 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 regulation 25(4) of the Environment Regulations).

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- On 18 June 2026, GPAP shared its feedback, claims or objections regarding this activity, indicating the information provided was sufficient to enable GPAP to make an informed assessment of the possible consequences of the activity on its functions, interests or activities.
- In addition to the information in the Consultation Information Sheet, Woodside provided additional information to GPAP in response to GPAP's feedback (Woodside's email of 30 July 2026).

Reasonable Period

Woodside allowed GPAP a reasonable period for consultation in the preparation of the EP because:

- A consultation period was stated in the initial correspondence to GPAP 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 and Woodside allowed GPAP 30 days for consultation.
- Consultation for this EP commenced 5 months ago.
- In this context, Woodside allowed GPAP 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 GPAP is appropriate and adapted to the nature of interests of GPAP:

- 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 a targeted social media campaigns (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Between May and August 2026, Woodside held information stalls at community events in the Pilbara region to raise awareness of the EP and provide additional opportunities for feedback. These events were promoted in local newspapers and on social media.
- In the absence of feedback, Woodside sent a follow-up consultation email on 21 May 2026, reminding GPAP 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:

- GPAP provided feedback or claims or objections regarding the adverse impact of the proposed activity to which this EP relates. 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 GPAP and has assessed the merits of each objection or claim (if any) 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 GPAP 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.

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4.10.4 Vocus

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed Vocus advising of the proposed activity (Record of Consultation, reference 6.1.9), provided a Consultation Information Sheet, a link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans: Information for the community',* and a submarine communication cables map.
- On 30 April 2026, Vocus thanked Woodside for the notification (SI Report A, reference 17.1). Vocus raised items **(1)** – **(2)**.
- On 9 July 2026, Woodside thanked Vocus for their email (SI Report A, reference 17.2). Woodside responded to items **(1)** – **(2)**.

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
(1) Noted that the North West Cable System (NWCS) Vocus fibre optic cable shown as proposed is in fact active.	**(1)** Woodside is aware NWCS Vocus fibre optic cable is active and not proposed.	**(1)** Woodside confirmed it is aware the NWCS Vocus fibre optic cable is no longer proposed, but active.	**(1)** No changes or additional measures are required. Submarine communication infrastructure is described in Section 4.10.6 of the EP.
(2) Noted that as the activity relates to a survey only Vocus has no concerns.	**(2)** Woodside acknowledges that Vocus has no concerns due to the nature of the activity.	**(2)** Woodside noted that as the activity was for GPGT surveys, Vocus had no concerns.	**(2)** No changes or additional measures are 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, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.8.1 of the EP).	No changes or additional measures are required.
Summary Report – Consultation Complete			
Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with Vocus 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 Vocus sufficient information to allow Vocus 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 April 2026. Woodside gave this information to Vocus on 28 April 2026, 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 Petroleum Activities Program, 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).
- In addition to the Consultation Information Sheet, Woodside provided Vocus with information tailored to Vocus by providing a submarine cables map in relation to the activity.
- On 30 April 2026, Vocus shared its feedback, claims or objections regarding this activity, indicating the information provided was sufficient to enable Vocus to make an informed assessment of the possible consequences of the activity on its functions, interests or activities.

Reasonable Period

Woodside allowed Vocus a reasonable period for consultation in the preparation of the EP because:

- A consultation period was stated in the initial correspondence to Vocus 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 and Woodside allowed Vocus 30 days for consultation.
- Consultation for this EP commenced 5 months ago.
- In this context, Woodside allowed Vocus 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 Vocus is appropriate and adapted to the nature of interests of Vocus:

- 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 a targeted social media campaigns (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.

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:

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- Vocus 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(b) and 34(g), Woodside has:
  - Responded to feedback from Vocus.
  - Made no changes or inclusions to the EP as a result of consultation with Vocus 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.

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4.11 Traditional custodians and nominated representative corporations

4.11.1 Bardi and Jawi Niimidiman Aboriginal Corporation (BJNAC)

BJNAC is established under the *Native Title Act 1993 (Cth)* by the Bardi and Jawi People to represent the Bardi and Jawi people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed BJNAC advising of the proposed activity (Record of Consultation, reference 6.1.24). The email included:
  - A Summary Information Sheet.
  - A link to the Consultation Information Sheet.
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines, Consultation Brochure,* and *Policy for Managing Gender-Restricted Information* and contact details.
  - A request for information on the group's preferred ways to engage with Woodside about the proposed activity, including the opportunity to meet face-to-face.
  - A request for feedback by 28 May 2026 for the purposes of preparation of the EP.
  - 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.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information.
  - A request for the group to provide information about the proposed activity to other individuals as required.
  - Information about an Underwater Cultural Heritage study of the proposed Browse to NWS Project Area.
- On 19 May 2026, Woodside emailed BJNAC a reminder about the proposed activity (SI Report B, reference 1.1.1). The email included:
  - A reference to the original consultation email for this EP sent on 28 April 2026, which included a Summary Information Sheet and a link to the Consultation Information Sheet.
  - A reminder that consultation for the preparation of the EP closes on 28 May 2026.
  - A request for information on how the group 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.
  - 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.
- **(1-3)** On 29 September 2026, BJNAC, Nimanburr (which Woodside chose to contact but is not relevant to this EP), WAC and Joombarn-buru (a group not relevant to this EP) emailed a letter to Woodside (SI Report B, reference 1.1.2).

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- **(1-3)** On 5 October 2026, Woodside replied to BJNAC, Nimanburr (which Woodside chose to contact, but is not relevant to this EP), WAC and Joombarn-buru (a group not relevant to this EP) and informed the PBCs that their letter dated 29 September 2026 had been referred to another part of the Woodside business for response (SI Report B, reference 1.1.3).
- **(1-3)** On 6 October 2026, Woodside responded to BJNAC, Nimanburr (which Woodside chose to contact but is not relevant to this EP), WAC and Joombarn-buru) (a group not relevant to this EP) and addressed matters raised in correspondence dated 29 September 2026 (SI Report 1.1.4)
- **(1-3)** On 14 October 2026, Woodside received an email from Joombarn-buru (a group not relevant to this EP), BJNAC, Nimanburr (which Woodside chose to contact but is not relevant to this EP) and WAC (SI Report B, reference 1.1.5).
- **(1-3)** On 22 October 2026, Woodside replied to the email received on 14 October 2026 (SI Report B, reference 1.1.6).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Response	Inclusion in Environment Plan
(1) Woodside has not meaningfully consulted with Traditional Owners. Being contacted is not the same as being properly consulted. The timeframe for consultation did not give Traditional Owners a practical opportunity to respond. A lack of response to correspondence should not be interpreted as an absence of concern.	**(1)** Woodside rejects the assertion that it has not meaningfully consulted with Traditional Owners. Woodside has determined relevant Traditional Owner groups to consult with in accordance with its established consultation methodology. Woodside has met its regulatory obligations by providing relevant Traditional Owner groups: • Sufficient information. • A reasonable consultation period, • A reasonable opportunity to provide feedback.	**(1)** Woodside does not agree that it has not provided meaningful opportunities for Traditional Owner groups assessed as relevant for this EP to provide feedback and engage in consultation. Woodside began consultation on 28 April 2026 and requested feedback by 28 May 2026 to support preparation of the EPs. Woodside provided a Summary Information Sheet specifically developed by Woodside's Indigenous Affairs Team, along with a link to a more detailed Consultation Information Sheet. Woodside also invited questions, requests for further information and offered to meet to discuss the proposed activities. Although the formal consultation period has closed, Woodside continues to receive feedback for the life of the EP which will be considered as part of ongoing engagement.	**(1)** No action required.

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(2) Consultation with a PBC should not be treated as a substitute for engagement with the relevant Traditional Owners and cultural knowledge holders.	**(2)** In accordance with Woodside's established methodology, Woodside engages Traditional Owners through their nominated representative bodies when consulting on EPs.	**(2)** Woodside's consultation with Traditional Owners about Woodside's activities is guided by an established methodology designed to support compliance with applicable regulations and informed by the principles of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). Woodside engages Traditional Owners through their nominated representative bodies and invites them to share information with members.	**(2)** No action required.
(3) Joombarn-buru has requested Woodside meet Joombarn-buru, BJNAC, Nimanburr, and WAC in Broome. The agenda would include discussion about a joint consultation approach and consultation framework regarding Woodside's offshore activities relevant to Kimberley Sea Country.	**(3)** Titleholders are not required to receive or enter into consultation framework agreements with relevant persons to satisfy consultation requirements. Woodside is willing to discuss proposals for consultation framework agreements. These discussions would occur in parallel to EP consultation.	**(3)** Woodside has agreed to meet Joombarn-buru, BJNAC, Nimanburr and WAC to discuss this EP and the wider Browse Project. Woodside has also requested that the groups inform it if would like information about any other Woodside activities that may impact the groups' functions, interests and activities. Any proposal regarding a consultation framework agreement would need to be considered through Woodside's established governance and approval processes. While Woodside is open to discussing a consultation framework agreement with the PBCs, it is not a prerequisite for EP consultation. Any discussions regarding a consultation framework agreement would occur separately and in parallel to EP consultation.	**(3)** No action required.

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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 7.8 of this EP).	Based on the engagement to date, no changes or additional measures are required.

Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environmental Regulations and consultation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

Sufficient Information

Sufficient information has been provided because:

- On 28 April 2026, Woodside made the Consultation Information Sheet available on the Woodside website.
- Woodside provided information on 28 April 2026 when consultation commenced. Woodside provided:
  - A Summary Information Sheet developed specifically for Traditional Custodian groups and reviewed by a member of the Indigenous Affairs team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, a summary of 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 *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 the group'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.

Reasonable Period

A reasonable period for consultation in the preparation of the EP has been provided because:

- Woodside commenced consultation on this EP on 28 April 2026 and requested feedback by 28 May 2026 for the purposes of preparation of the EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside has addressed and responded to feedback for five 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:

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- Woodside sought direction on the group's preferred method of consultation and has consulted in a way that Woodside understands is appropriate for Traditional Custodian groups.
- Woodside has made information on this EP publicly available for five months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (6 May 2026) and National Indigenous Times (28 April 2026) advising of the proposed activities and requesting comments or feedback.
- Woodside's initial email about this EP on 28 April 2026:
  - 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 Indigenous Affairs Engagement team. Woodside also provided contact details for NOPSEMA.
  - Offered for Woodside to speak with members as well as the Board.
  - Asked the group to advise how it would like Woodside to engage and whether further information is required.

Outcomes of Consultation

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- While feedback was received, there were no objections or claims relating specifically to the 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 7.8 of the EP).

4.11.2 Boorroola Moorrool Moorrool (BMM)

The Boorroola Moorrool Moorrool claim was filed in 2016 and covers approximately 378 square kilometres of land and waters in the north-west Kimberley in Western Australia. The claim area includes Derby and overlaps another native title claim, the Warrwa Combined application. Woodside has consulted with BMM through the group's legal representatives as noted by the Native Title Tribunal (Applications and Determinations).

Summary of information provided and record of consultation for this EP:

- On 10 August 2026, Woodside emailed BMM via its legal representative advising of the proposed activity (Record of Consultation, reference 6.1.25). The email included:
  - A Summary Information Sheet.
  - A link to the Consultation Information Sheet.
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines, Consultation Brochure,* and *Policy for Managing Gender-Restricted Information* and contact details.
  - A request for information on the group's preferred ways to engage with Woodside about the proposed activity, including the opportunity to meet face-to-face.
  - A request for feedback by 10 September 2026 for the purposes of preparation of the EP.

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- 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.
- Woodside's commitment to managing gender-restricted or other culturally sensitive information.
- A request for the group to provide information about the proposed activity to other individuals as required.
- Information about an Underwater Cultural Heritage study survey of the proposed Browse to NWS Project Area.

- On 24 August 2026, Woodside emailed BMM via its legal representative a reminder about the proposed activity (SI Report B, reference 1.2.1). The email included:
  - A reference to the original consultation email for this EP sent on 10 August 2026, which included a Summary Information Sheet and a link to the Consultation Information Sheet.
  - A reminder that consultation for the preparation of the EP closes on 10 September 2026.
  - A request for information on how the group 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.
  - 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.
- **(1-4)** On 10 September 2026, BMM via its legal representative emailed Woodside (SI Report B, reference 1.2.2).
- **(1-4)** On 22 September 2026, Woodside replied to BMM's letter of 10 September 2026 (SI Report B, reference 1.2.3).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Response	Inclusion in Environment Plan
(1) No meaningful consultation has occurred.	**(1)** Woodside rejects this assertion. Woodside has provided BMM via its legal representative sufficient information, a reasonable period and reasonable opportunity to provide feedback in relation to this EP. Woodside will continue to accept feedback from BMM as part of ongoing consultation and has offered to meet BMM to discuss the EP in more detail.	**(1)** Woodside has confirmed in writing that consultation in relation to the EP commenced on 10 August 2026 when Woodside provided consultation information and made offers to provide further information, answer questions or meet. Woodside confirmed that although the formal consultation period has closed, BMM is welcome to provide feedback throughout the life of the EP.	**(1)** No action required.
(2) The timeframes for consultation were inadequate. BMM requests Woodside extend the consultation period.	**(2)** Woodside began consulting with BMM on 10 August 2026 and requested feedback by 10 September 2026. This	**(2)** Timeframes provided for consultation on this EP aligned with Woodside's established consultation methodology.	**(2)** No action required.

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	period aligned with Woodside's established methodology. The formal consultation period has closed however BMM is welcome to submit feedback throughout the life of the EP.	Although the formal consultation period has closed, BMM is welcome to provide feedback throughout the life of the 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 7.8 of this EP).	
(3) BMM requests Woodside enter a consultation protocol for the broader North West Shelf project. BMM has provided Woodside with a draft protocol and requested a meeting to discuss this document.	**(3)** A consultation protocol is not a pre-requisite for EP consultation.	**(3)** Woodside will review BMM's draft consultation protocol and will provide feedback separately in due course. A consultation protocol is not a prerequisite for EP consultation however Woodside values the opportunity to discuss the protocol and will continue those discussions separately and in parallel to consultation for this EP.	**(3)** No action required.
(4) BMM requests any available documentation that will inform the EP and the draft EP.	**(4)** Woodside has provided BMM with sufficient information including a summary information sheet and link to a detailed consultation information sheet. The EP and its contents will be available on the NOPSEMA website after submission. Woodside has offered to meet BMM to discuss the EP's contents in more detail.	**(4)** As the EP is still being drafted at the time of consultation, Woodside offered to provide further detail on any specific aspects relating to the possible consequences on the activity on any of BMM's functions, interests and activities, or provide any further information so that BMM has the opportunity to understand the possible consequences of the proposed activities. Woodside advised BMM that the EP and its contents will be available on the NOPSEMA website after submission.	**(4)** No action 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	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be	Based on the engagement to date, no changes or additional measures are required.

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	the EP relates as required under Regulation 24.	assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.8 of this EP).	

Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environmental Regulations and consultation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

Sufficient Information

Sufficient information has been provided because:

- On 28 April 2026, Woodside made the Consultation Information Sheet available on the Woodside website.
- Woodside provided BMM information on 10 August 2026 when consultation commenced. Woodside provided:
  - A Summary Information Sheet developed specifically for Traditional Custodian groups and reviewed by a member of the Indigenous Affairs team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, a summary of 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 *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 the group'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.

Reasonable Period

A reasonable period for consultation in the preparation of the EP has been provided because:

- Woodside commenced consultation on this EP on 10 August 2026 and requested feedback by 10 September 2026 for the purposes of preparation of the EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside has addressed and responded to feedback for five 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 the group's preferred method of consultation and has consulted in a way that Woodside understands is appropriate for Traditional Custodian groups.
- Woodside has made information on this EP publicly available for five months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (6 May 2026) and National Indigenous Times (28 April 2026) advising of the proposed activities and requesting comments or feedback.

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- Woodside's initial email about this EP on 10 August 2026:
  - 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 Indigenous Affairs Engagement team. Woodside also provided contact details for NOPSEMA.
  - Offered for Woodside to speak with members as well as the Board.
  - Asked the group to advise how it would like Woodside to engage and whether further information is required.

Outcomes of Consultation

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- BMM has provided feedback on Woodside's consultation which Woodside has addressed. BMM has not provided feedback relating to the activities within the EP therefore additions to the EP are not required.
- 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 7.8 of the EP).

4.11.3 Dambimangari Aboriginal Corporation (DAC)

DAC is established under the *Native Title Act 1993 (Cth)* by the Dambimangari people to represent the Dambimangari people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Summary of information provided and record of consultation for this EP:

- On 28 April 2026 Woodside emailed DAC advising of the proposed activity (Record of Consultation, reference 6.1.26). The email included:
  - A Summary Information Sheet.
  - A link to the Consultation Information Sheet.
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines, Consultation Brochure,* and *Policy for Managing Gender-Restricted Information* and contact details.
  - A request for information on the group's preferred ways to engage with Woodside about the proposed activity, including the opportunity to meet face-to-face.
  - A request for feedback by 28 May 2026 for the purposes of preparation of the EP.
  - 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.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information.
  - A request for the group to provide information about the proposed activity to other individuals as required.

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- Information about an Underwater Cultural Heritage study of the proposed Browse to NWS Project Area.

- On 18 May 2026, DAC responded to Woodside's Record of Consultation and provided two items of feedback **(1, 2)** (SI Report B, reference 1.3.1)
- On 19 May 2026, Woodside emailed DAC a reminder about the proposed activity (SI Report B, reference 1.3.2). The email included:
  - A reference to the original consultation email for this EP sent on 28 April 2026, which included a Summary Information Sheet and a link to the Consultation Information Sheet.
  - A reminder that consultation for the preparation of the EP closes on 29 May 2026.
  - A request for information on how the group 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.
  - 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 20 May 2026, Woodside and DAC exchanged emails about **(1, 2)** (SI Report B, references 1.3.3 – 1.3.4).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Response	Inclusion in Environment Plan
(1) DAC will refrain from comment as the EP covers an area north of DAC waters.	**(1)** Woodside acknowledges DAC's decision to refrain from comment.	**(1)** Woodside thanked DAC for its response.	**(1)** No action required.
(2) DAC requested to be notified if its territory is affected by hazardous materials.	**(2)** Woodside notifies relevant Traditional Owner groups in the unlikely event of an unplanned incident.	**(2)** Woodside explained to DAC that this EP relates to sea bottom sampling and scanning but it would inform all stakeholders in the unlikely event of an unplanned incident.	**(2)** No action required.
While feedback has been received, there were no objections or claims.	Woodside has assessed the merits of feedback about 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	Based on the engagement to date, No changes or additional measures are required.

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		Management of Change and Revision process (see Section 7.8 of this EP).	

Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environmental Regulations and consultation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

Sufficient Information

Sufficient information has been provided because:

- On 28 April 2026, Woodside made the Consultation Information Sheet available on the Woodside website.
- Woodside provided information on 28 April 2026 when consultation commenced. Woodside provided:
  - A Summary Information Sheet developed specifically for Traditional Custodian groups and reviewed by a member of the Indigenous Affairs team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, a summary of 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 *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 the group'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.

Reasonable Period

A reasonable period for consultation in the preparation of the EP has been provided because:

- Woodside commenced consultation on this EP on 28 April 2026 and requested feedback by 28 May 2026 for the purposes of preparation of the EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside has addressed and responded to feedback for five 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 the group's preferred method of consultation and has consulted in a way that Woodside understands is appropriate for Traditional Custodian groups.
- Woodside has made information on this EP publicly available for five months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (6 May 2026) and National Indigenous Times (28 April 2026) advising of the proposed activities and requesting comments or feedback.
- Woodside's initial email about this EP on 28 April 2026:

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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 Indigenous Affairs Engagement team. Woodside also provided contact details for NOPSEMA.
- Offered for Woodside to speak with members as well as the Board.
- Asked the group to advise how it would like Woodside to engage and whether further information is required.

Outcomes of Consultation

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- While feedback was received there were no objections or claims.
- 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 7.8 of the EP).

4.11.4 Mayala Inninalang Aboriginal Corporation (MIAC)

MIAC is established under the *Native Title Act 1993 (Cth)* by the Mayala people to represent the Mayala people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed MIAC advising of the proposed activity (Record of Consultation, reference 6.1.32). The email included:
  - A Summary Information Sheet.
  - A link to the Consultation Information Sheet.
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines, Consultation Brochure,* and *Policy for Managing Gender-Restricted Information* and contact details.
  - A request for information on the group's preferred ways to engage with Woodside about the proposed activity, including the opportunity to meet face-to-face.
  - A request for feedback by 28 May 2026 for the purposes of preparation of the EP.
  - 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.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information.
  - A request for the group to provide information about the proposed activity to other individuals as required.
  - Information about an Underwater Cultural Heritage study survey of the proposed Browse to NWS Project Area.
- On 8 May 2026, MIAC emailed Woodside and requested item **(1)** (SI Report B, reference 1.8.1).

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- On 11 May 2026, Woodside emailed MIAC a response to item **(1)** (SI Report B, reference 1.8.2).
- Between 12 May and 12 June 2026, Woodside and MIAC exchanged phone calls **(1)**, **(1)** (SI Report B, reference 1.8.3).
- On 19 May 2026, Woodside emailed MIAC a reminder about the proposed activity (SI Report B, reference 1.8.4). The email included:
  - A reference to the original consultation email for this EP sent on 28 April 2026, which included a Summary Information Sheet and a link to the Consultation Information Sheet.
  - A reminder that consultation for the preparation of the EP closes on 29 May 2026.
  - A request for information on how the group 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.
  - 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.

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Response	Inclusion in Environment Plan
(1) MIAC requested a summary of Woodside's projects and exploration in the region that might affect MIAC and a consultation schedule. MIAC also sought information about the timing of the Browse Project.	**(1)** Dates for future EP consultation have not been finalised. However, Woodside has material to share with stakeholders about the proposed Browse Project.	**(1)** Woodside spoke to MIAC over the phone about EP timing and the Browse Project. Woodside also offered to meet MIAC in-person to discuss this in more detail.	**(1)** No action required.
While feedback has been received, there were no objections or claims.	Woodside has assessed the merits of feedback about 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 7.8 of this EP).	Based on the engagement to date, No changes or additional measures are required.
Summary Report – Consultation Complete			
Woodside has discharged its obligations for consultation under regulation 25 of the Environmental Regulations and consultation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:			

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Sufficient Information

Sufficient information has been provided because:

- On 28 April 2026, Woodside made the Consultation Information Sheet available on the Woodside website.
- Woodside provided information on 28 April 2026 when consultation commenced. Woodside provided:
  - A Summary Information Sheet developed specifically for Traditional Custodian groups and reviewed by a member of the Indigenous Affairs team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, a summary of 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 *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 the group'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.

Reasonable Period

A reasonable period for consultation in the preparation of the EP has been provided because:

- Woodside commenced consultation on this EP on 28 April 2026 and requested feedback by 28 May 2026 for the purposes of preparation of the EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside has addressed and responded to feedback for five 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 the group's preferred method of consultation and has consulted in a way that Woodside understands is appropriate for Traditional Custodian groups.
- Woodside has made information on this EP publicly available for five months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (6 May 2026) and National Indigenous Times (28 April 2026) advising of the proposed activities and requesting comments or feedback.
- Woodside's initial email about this EP on 28 April:
  - 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 Indigenous Affairs Engagement team. Woodside also provided contact details for NOPSEMA.
  - Offered for Woodside to speak with members as well as the Board.
  - Asked the group to advise how it would like Woodside to engage and whether further information is required.
- Woodside spoke to MIAC on the phone and offered to meet on a number of occasions to discuss the proposed activity.

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:

- While feedback was received there were no objections or claims.
- 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 7.8 of the EP).

4.11.5 Walalakoo Aboriginal Corporation (WAC)

WAC is established under the *Native Title Act 1993 (Cth)* by the Nyikina Mangala people to represent their communal interests, including the management and protection of cultural values. WAC has self-identified as a relevant person for oil and gas projects in the Browse Basin. As per WAC's direction, Woodside includes WAC's legal representative in all communications about EPs. Woodside has an established but intermittent engagement history with WAC characterised by repeated attempts to initiate consultation and limited direct response.

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed WAC and its legal representative advising of the proposed activity (Record of Consultation, reference 6.1.36). The email included:
  - A Summary Information Sheet.
  - A link to the Consultation Information Sheet.
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines, Consultation Brochure,* and *Policy for Managing Gender-Restricted Information* and contact details.
  - A request for information on the group's preferred ways to engage with Woodside about the proposed activity, including the opportunity to meet face-to-face.
  - A request for feedback by 28 May 2026 for the purposes of preparation of the EP.
  - 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.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information.
  - A request for the group to provide information about the proposed activity to other individuals as required.
- On 19 May 2026, Woodside emailed WAC and its legal representative a reminder about the proposed activity (SI Report B, reference 1.11.1). The email included:
  - A reference to the original consultation email for this EP sent on 28 April 2026, which included a Summary Information Sheet and a link to the Consultation Information Sheet.
  - A reminder that consultation for the preparation of the EP closes on 28 May 2026.
  - A request for information on how the group 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.

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- 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.

- **(1-3)** On 29 September 2026, BJNAC, Nimanburr (which Woodside chose to contact, but is not relevant to this EP), WAC and Joombarn-buru (a group not relevant to this EP) emailed a letter to Woodside (SI Report B, reference 1.11.2).
- **(1-3)** On 5 October 2026, Woodside replied to BJNAC, Nimanburr (which Woodside chose to contact but is not relevant to this EP), WAC and Joombarn-buru (a group not relevant to this EP) and informed the PBCs that their letter dated 29 September 2026 had been referred to another part of the Woodside business for response (SI Report B, reference 1.11.3).
- **(1-3)** On 6 October 2026, Woodside responded to BJNAC, Nimanburr (which Woodside chose to contact but is not relevant to this EP), WAC and Joombarn-buru (a group not relevant to this EP) and addressed matters raised in correspondence dated 29 September 2026 (SI Report 1.11.4)
- **(1-3)** On 14 October 2026, Woodside received an email from Joombarn-buru (a group not relevant to this EP), BJNAC, Nimanburr (which Woodside chose to contact but is not relevant to this EP) and WAC (SI Report B, reference 1.11.5).
- **(1-3)** On 22 October 2026, Woodside replied to the email received on 14 October 2026 (SI Report B, reference 1.11.6).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Response	Inclusion in Environment Plan
(1) Woodside has not meaningfully consulted with Traditional Owners. Being contacted is not the same as being properly consulted. The timeframe for consultation did not give Traditional Owners a practical opportunity to respond. A lack of response to correspondence should not be interpreted as an absence of concern.	**(1)** Woodside rejects the assertion that it has not meaningfully consulted with Traditional Owners. Woodside has determined relevant Traditional Owner groups to consult with in accordance with its established consultation methodology. Woodside has met its regulatory obligations by providing relevant Traditional Owner groups: • Sufficient information. • A reasonable consultation period, • A reasonable opportunity to provide feedback.	**(1)** Woodside does not agree that it has not provided meaningful opportunities for Traditional Owner groups assessed as relevant for this EP to provide feedback and engage in consultation. Woodside began consultation on 28 April 2026 and requested feedback by 28 May 2026 to support preparation of the EPs. Woodside provided a Summary Information Sheet specifically developed by Woodside's Indigenous Affairs Team, along with a link to a more detailed Consultation Information Sheet. Woodside also invited questions, requests for further information and offered to meet to discuss the proposed activities. Although the formal consultation period has closed, Woodside continues to	**(1)** No action required.

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		receive feedback for the life of the EP which will be considered as part of ongoing engagement.	
(2) Consultation with a PBC should not be treated as a substitute for engagement with the relevant Traditional Owners and cultural knowledge holders.	**(2)** In accordance with Woodside's established methodology, Woodside engages Traditional Owners through their nominated representative bodies when consulting on EPs.	**(2)** Woodside's consultation with Traditional Owners about Woodside's activities is guided by an established methodology designed to support compliance with applicable regulations and informed by the principles of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). Woodside engages Traditional Owners through their nominated representative bodies and invites them to share information with members.	**(2)** No action required.
(3) Joombarn-buru has requested Woodside meet Joombarn-buru, BJNAC, Nimanburr, and WAC in Broome. The agenda would include discussion about a joint consultation approach and consultation framework regarding Woodside's offshore activities relevant to Kimberley Sea Country.	**(3)** Titleholders are not required to receive or enter into consultation framework agreements with relevant persons to satisfy consultation requirements. Woodside is willing to discuss proposals for consultation framework agreements. These discussions would occur in parallel to EP consultation.	**(3)** Woodside has agreed to meet Joombarn-buru, BJNAC, Nimanburr and WAC to discuss this EP and the wider Browse Project. Woodside has also requested that the groups inform it if would like information about any other Woodside activities that may impact the groups' functions, interests and activities. Any proposal regarding a consultation framework agreement would need to be considered through Woodside's established governance and approval processes. While Woodside is open to discussing a consultation framework agreement with the PBCs, it is not a prerequisite for EP consultation.	**(3)** No action required.

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		Any discussions regarding a consultation framework agreement would occur separately and in parallel to EP consultation.	
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 7.8 of this EP).	Based on the engagement to date, no changes or additional measures are required.

Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environmental Regulations and consultation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

Sufficient Information

Sufficient information has been provided because:

- On 28 April 2026, Woodside made the Consultation Information Sheet available on the Woodside website.
- Woodside provided information on 28 April 2026 when consultation commenced. Woodside provided:
  - A Summary Information Sheet developed specifically for Traditional Custodian groups and reviewed by a member of the Indigenous Affairs team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, a summary of 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 *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 the group'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.

Reasonable Period

A reasonable period for consultation in the preparation of the EP has been provided because:

- Woodside commenced consultation on this EP on 28 April 2026 and requested feedback by 28 May 2026 for the purposes of preparation of the EP in line with Woodside's methodology of a 30-day period for consultation.

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- Woodside has addressed and responded to feedback for five 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 the group’s preferred method of consultation and has consulted in a way that Woodside understands is appropriate for Traditional Custodian groups.
- Woodside has made information on this EP publicly available for five months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (6 May 2026) and National Indigenous Times (28 April 2026) advising of the proposed activities and requesting comments or feedback.
- Woodside’s initial email about this EP on 28 April 2026:
  - 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 Indigenous Affairs Engagement team. Woodside also provided contact details for NOPSEMA.
  - Offered for Woodside to speak with members as well as the Board.
  - Asked the group to advise how it would like Woodside to engage and whether further information is required.

Outcomes of Consultation

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- While feedback was received, there were no objections or claims relating specifically to the 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 7.8 of the EP).

4.11.6 Wanjina-Wunggurr (Native Title) Aboriginal Corporation (WWAC)

WWAC is established under the *Native Title Act 1993 (Cth)* by the Wanjina and Wunggur people to represent the Wanjina and Wunggur people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed WWAC advising of the proposed activity (Record of Consultation, 6.1.39). The email included:
  - A Summary Information Sheet.
  - A link to the Consultation Information Sheet.
  - An overview of the proposed activity.

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- Links to the NOPSEMA *Consultation Guidelines, Consultation Brochure,* and *Policy for Managing Gender-Restricted Information* and contact details.
- A request for information on the group's preferred ways to engage with Woodside about the proposed activity, including the opportunity to meet face-to-face.
- A request for feedback by 28 May 2026 for the purposes of preparation of the EP.
- 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.
- Woodside's commitment to managing gender-restricted or other culturally sensitive information.
- A request for the group to provide information about the proposed activity to other individuals as required.
- Information about an Underwater Cultural Heritage study of the proposed Browse to NWS Project Area.

• On 19 May 2026, Woodside emailed WWAC a reminder about the proposed activity (SI Report B, reference 1.12.1). The email included:

- A reference to the original consultation email for this EP sent on 28 April 2026, which included a Summary Information Sheet and a link to the Consultation Information Sheet.
- A reminder that consultation for the preparation of the EP closes on 28 May 2026.
- A request for information on how the group 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.
- 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.

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	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 7.8 of this EP).	No changes or additional measures are required.

Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environmental Regulations and consultation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

Sufficient Information

Sufficient information has been provided because:

• On 28 April 2026, Woodside made the Consultation Information Sheet available on the Woodside website.

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- Woodside provided information on 28 April 2026 when consultation commenced. Woodside provided:
  - A Summary Information Sheet developed specifically for Traditional Custodian groups and reviewed by a member of the Indigenous Affairs team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, a summary of 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 *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 the group'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.

Reasonable Period

A reasonable period for consultation in the preparation of the EP has been provided because:

- Woodside commenced consultation on this EP on 28 April 2026 and requested feedback by 28 May 2026 for the purposes of preparation of the EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside has addressed and responded to feedback for five 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 the group's preferred method of consultation and has consulted in a way that Woodside understands is appropriate for Traditional Custodian groups.
- Woodside has made information on this EP publicly available for five months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (6 May 2026) and National Indigenous Times (28 April 2026) advising of the proposed activities and requesting comments or feedback.
- Woodside's initial email about this EP on 28 April 2026:
  - 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 Indigenous Affairs Engagement team. Woodside also provided contact details for NOPSEMA.
  - Offered for Woodside to speak with members as well as the Board.
  - Asked the group to advise how it would like Woodside to engage and whether further information is required.

Outcomes of Consultation

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No feedback or information during consultation was provided for this EP.

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- 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 7.8 of the EP).

4.11.7 Warrwa Combined (Warrwa)

The Warrwa Combined claim was filed in 2014 and covers approximately 378 square kilometres of land and waters in the north-west Kimberley in Western Australia. The claim area includes Derby and overlaps another native title claim, the Boorroola Moorrool Moorrool. Woodside has consulted Warrwa through the KLC, the group's representative as noted by the Native Title Tribunal.

Summary of information provided and record of consultation for this EP:

- On 10 August 2026, Woodside emailed Warrwa (via KLC) advising of the proposed activity (Record of Consultation, reference 6.1.37). The email included:
  - A Summary Information Sheet.
  - A link to the Consultation Information Sheet.
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines, Consultation Brochure,* and *Policy for Managing Gender-Restricted Information* and contact details.
  - A request for information on the group's preferred ways to engage with Woodside about the proposed activity, including the opportunity to meet face-to-face.
  - A request for feedback by 10 September 2026 for the purposes of preparation of the EP.
  - 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.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information.
  - A request for the group to provide information about the proposed activity to other individuals as required.
  - Information about an Underwater Cultural Heritage study survey of the proposed Browse to NWS Project Area.
- On 24 August 2026, Woodside emailed Warrwa (via KLC) a reminder about the proposed activity (SI Report B, reference 1.13.1). The email included:
  - A reference to the original consultation email for this EP sent on 10 August 2026, which included a Summary Information Sheet and a link to the Consultation Information Sheet.
  - A reminder that consultation for the preparation of the EP closes on 10 September 2026.
  - A request for information on how the group 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.
  - 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.

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Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	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 7.8 of this EP).	No changes or additional measures are required.

Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environmental Regulations and consultation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

Sufficient Information

Sufficient information has been provided because:

- On 28 April 2026, Woodside made the Consultation Information Sheet available on the Woodside website.
- Woodside provided information on 10 August 2026 when consultation commenced. Woodside provided:
  - A Summary Information Sheet developed specifically for Traditional Custodian groups and reviewed by a member of the Indigenous Affairs team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, a summary of 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 *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 the group'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.

Reasonable Period

A reasonable period for consultation in the preparation of the EP has been provided because:

- Woodside commenced consultation on this EP on 10 August 2026 and requested feedback by 10 September 2026 for the purposes of preparation of the EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside has addressed and responded to feedback for five 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:

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- Woodside sought direction on the group's preferred method of consultation and has consulted in a way that Woodside understands is appropriate for Traditional Custodian groups.
- Woodside has made information on this EP publicly available for five months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (6 May 2026) and National Indigenous Times (6.3.3) advising of the proposed activities and requesting comments or feedback.
- Woodside's initial email about this EP on 10 August 2026:
  - 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 Indigenous Affairs Engagement team. Woodside also provided contact details for NOPSEMA.
  - Offered for Woodside to speak with members as well as the Board.
  - Asked the group to advise how it would like Woodside to engage and whether further information is required.

Outcomes of Consultation

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No feedback or information during consultation was provided for this EP.
- 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 7.8 of the EP).

4.11.8 Wilinggin Aboriginal Corporation (Wilinggin)

Wilinggin Aboriginal Corporation is established under the *Native Title Act 1993 (Cth)* by the Ngarinyin people to represent their communal interests, including the management and protection of cultural values.

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed Wilinggin advising of the proposed activity (Record of Consultation, reference 6.1.40). The email included:
  - A Summary Information Sheet.
  - A link to the Consultation Information Sheet.
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines*, *Consultation Brochure*, and *Policy for Managing Gender-Restricted Information* and contact details.
  - A request for information on the group's preferred ways to engage with Woodside about the proposed activity, including the opportunity to meet face-to-face.
  - A request for feedback by 28 May 2026 for the purposes of preparation of the EP.

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- 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.
- Woodside's commitment to managing gender-restricted or other culturally sensitive information.
- A request for the group to provide information about the proposed activity to other individuals as required.
- Information about an Underwater Cultural Heritage study survey of the proposed Browse to NWS Project Area.

- On 19 May 2026, Woodside emailed Wilinggin a reminder about the proposed activity (SI Report B, reference 1.14.1). The email included:
  - A reference to the original consultation email for this EP sent on 28 April 2026, which included a Summary Information Sheet and a link to the Consultation Information Sheet.
  - A reminder that consultation for the preparation of the EP closes on 28 May 2026.
  - A request for information on how the group 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.
  - 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.

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	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 7.8 of this EP).	No changes or additional measures are required.

Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environmental Regulations and consultation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

Sufficient Information

Sufficient information has been provided because:

- On 28 April 2026, Woodside made the Consultation Information Sheet available on the Woodside website.
- Woodside provided information on 28 April 2026 when consultation commenced. Woodside provided:
  - A Summary Information Sheet developed specifically for Traditional Custodian groups and reviewed by a member of the Indigenous Affairs team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, a summary of the potential risks and impacts of the activity, diagrams and details about how to provide feedback.

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  - Links to the NOPSEMA *Consultation Guidelines, Consultation Brochure,* and *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 the group'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.

Reasonable Period

A reasonable period for consultation in the preparation of the EP has been provided because:

- Woodside commenced consultation on this EP on 28 April 2026 and requested feedback by 28 May 2026 for the purposes of preparation of the EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside has addressed and responded to feedback for five 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 the group's preferred method of consultation and has consulted in a way that Woodside understands is appropriate for Traditional Custodian groups.
- Woodside has made information on this EP publicly available for five months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (6 May 2026) and National Indigenous Times (28 April 2026) advising of the proposed activities and requesting comments or feedback.
- Woodside's initial email about this EP on 28 April 2026:
  - 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 Indigenous Affairs Engagement team. Woodside also provided contact details for NOPSEMA.
  - Offered for Woodside to speak with members as well as the Board.
  - Asked the group to advise how it would like Woodside to engage and whether further information is required.

Outcomes of Consultation

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No feedback or information during consultation was provided for this EP.
- 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 7.8 of the EP).

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4.12 Native Title representative bodies

4.12.1 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.

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed KLC advising of the proposed activity (Record of Consultation, reference 6.1.29). The email included:
  - A Summary Information Sheet.
  - A link to the Consultation Information Sheet.
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines*, *Consultation Brochure*, and *Policy for Managing Gender-Restricted Information* and contact details.
  - A request for information on the group's preferred ways to engage with Woodside about the proposed activity, including the opportunity to meet face-to-face.
  - A request for feedback by 28 May 2026 for the purposes of preparation of the EP.
  - 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.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information.
  - A request for the group to provide information about the proposed activity to other individuals as required.
  - Information about an Underwater Cultural Heritage study survey of the proposed Browse to NWS Project Area.
- On 19 May 2026, Woodside emailed KLC a reminder about the proposed activity (SI Report B, reference 2.1.1). The email included:
  - A reference to the original consultation email for this EP sent on 28 April 2026, which included a Summary Information Sheet and a link to the Consultation Information Sheet.
  - A reminder that consultation for the preparation of the EP closes on 28 May 2026.
  - A request for information on how the group 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.
  - 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.

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Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	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 7.8 of this EP).	No changes or additional measures are required.

Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environmental Regulations and consultation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

Sufficient Information

Sufficient information has been provided because:

- On 28 April 2026, Woodside made the Consultation Information Sheet available on the Woodside website.
- Woodside provided information on 28 April 2026 when consultation commenced. Woodside provided:
  - A Summary Information Sheet developed specifically for Traditional Custodian groups and reviewed by a member of the Indigenous Affairs team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, a summary of 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 *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 the group'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.

Reasonable Period

A reasonable period for consultation in the preparation of the EP has been provided because:

- Woodside commenced consultation on this EP on 28 April 2026 and requested feedback by 28 May 2026 for the purposes of preparation of the EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside has addressed and responded to feedback for five 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 the group's preferred method of consultation and has consulted in a way that Woodside understands is appropriate for Traditional Custodian groups.
- Woodside has made information on this EP publicly available for five months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (6 May 2026) and National Indigenous Times (28 April 2026) advising of the proposed activities and requesting comments or feedback.

Woodside's initial email about this EP on 28 April 2026:

- 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 Indigenous Affairs Engagement team. Woodside also provided contact details for NOPSEMA.
- Offered for Woodside to speak with members as well as the Board.
- Asked the group to advise how it would like Woodside to engage and whether further information is required.

Outcomes of Consultation

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No feedback or information during consultation was provided for this EP.
- 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 7.8 of the EP).

4.12.2 Northern Land Council (NLC)

NLC is the Native Title Representative Body for the Northern Territory. 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.

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed NLC advising of the proposed activity (Record of Consultation, reference 6.1.34). The email included:
  - A Summary Information Sheet.
  - A link to the Consultation Information Sheet.
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines*, *Consultation Brochure*, and *Policy for Managing Gender-Restricted Information* and contact details.
  - A request for information on the group's preferred ways to engage with Woodside about the proposed activity, including the opportunity to meet face-to-face.
  - A request for feedback by 28 May 2026 for the purposes of preparation of the EP.

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- 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.
- Woodside's commitment to managing gender-restricted or other culturally sensitive information.
- A request for the group to provide information about the proposed activity to other individuals as required.
- Information about an Underwater Cultural Heritage study survey of the proposed Browse to NWS Project Area.

- On 19 May 2026, Woodside emailed NLC a reminder about the proposed activity (SI Report B, reference 2.2.1). The email included:
  - A reference to the original consultation email for this EP sent on 28 April 2026, which included a Summary Information Sheet and a link to the Consultation Information Sheet.
  - A reminder that consultation for the preparation of the EP closes on 28 May 2026.
  - A request for information on how the group 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.
  - 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 15 September 2026, Woodside emailed NLC an invitation to meet in Darwin as part of general engagement (SI Report B, reference 2.2.2).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	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 7.8 of this EP).	No changes or additional measures are required.

Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environmental Regulations and consultation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

Sufficient Information

Sufficient information has been provided because:

- On 28 April 2026 Woodside made the Consultation Information Sheet available on the Woodside website.
- Woodside provided information on 28 April 2026 when consultation commenced. Woodside provided:

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  - A Summary Information Sheet developed specifically for Traditional Custodian groups and reviewed by a member of the Indigenous Affairs team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, a summary of 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 *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 the group'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.

Reasonable Period

A reasonable period for consultation in the preparation of the EP has been provided because:

- Woodside commenced consultation on this EP on 28 April 2026 and requested feedback by 28 May 2026 for the purposes of preparation of the EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside has addressed and responded to feedback for five 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 the group's preferred method of consultation and has consulted in a way that Woodside understands is appropriate for Traditional Custodian groups.
- Woodside has made information on this EP publicly available for five months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (6 May 2026) and National Indigenous Times (28 April 2026) advising of the proposed activities and requesting comments or feedback.
- Woodside's initial email about this EP on 28 April 2026:
  - 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 Indigenous Affairs Engagement team. Woodside also provided contact details for NOPSEMA.
  - Offered for Woodside to speak with members as well as the Board.
  - Asked the group to advise how it would like Woodside to engage and whether further information is required.

Outcomes of Consultation

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No feedback or information during consultation was provided for this EP.
- 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 7.8 of the EP).

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4.13 Other Indigenous groups

4.13.1 Lombadina Aboriginal Corporation (Lombadina)

Lombadina is a Kimberley□based Aboriginal organisation with connections to coastal and marine environments. Lombadina is not a Prescribed Body Corporate or Registered Native Title Body Corporate under the *Native Title Act 1993 (Cth)*. Lombadina is a recreational marine user (operating under business names 'Garr Kayaking' and 'Lombadina Tours') and is therefore considered a relevant person for this EP.

Summary of information provided and record of consultation for this EP:

- On 29 April 2026, Woodside emailed Lombadina advising of the proposed activity (Record of Consultation, reference 6.1.31). The email included:
  - A Summary Information Sheet.
  - A link to the Consultation Information Sheet.
  - An overview of the proposed activity.
  - Links to the NOPSEMA Consultation Guidelines, Consultation Brochure, and Policy for Managing Gender-Restricted Information and contact details.
  - A request for information on the group's preferred ways to engage with Woodside about the proposed activity, including the opportunity to meet face-to-face.
  - A request for feedback by 28 May 2026 for the purposes of preparation of the EP.
  - 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.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information.
  - A request for the group to provide information about the proposed activity to other individuals as required.
  - Information about an Underwater Cultural Heritage study survey of the proposed Browse to NWS Project Area.
- On 19 May 2026, Woodside emailed Lombadina a reminder about the proposed activity (SI Report B, reference 1.7.1). The email included:
  - A reference to the original consultation email for this EP sent on 29 April 2026, which included a Summary Information Sheet.
  - A reminder that consultation for the preparation of the EP closes on 28 May 2026.
  - A request for information on how the group 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.
  - 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.

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- On 20 May 2026, Lombadina emailed Woodside and advised it was unable to open the attachments in Woodside's initial consultation email (Summary Information Sheet and Underwater Cultural Heritage study factsheet). Woodside called Lombadina and explained the material. Woodside also made plans to deliver hard copies to Lombadina (SI Report B, references 1.7.2 – 1.7.3).
- On 28 May 2026, Woodside met with Lombadina to discuss this EP and another unrelated activity (SI Report B, reference 1.7.4). Relevant matters discussed included:
  - An overview of the activity.
  - An enquiry from Lombadina **(1)** and Woodside response **(1).**

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
(1) Lombadina enquired whether a pipeline would be built as part of the Browse Project.	**(1)** The proposed Browse Project does include a proposed pipeline however this is not part of this EP.	**(1)** Woodside confirmed that the proposed project included a pipeline.	**(1)** No action required.
While feedback has been received, there were no objections or claims.	Woodside has assessed the merits of feedback about 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 7.8 of this EP).	Based on the engagement to date, No changes or additional measures are required.

Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environmental Regulations and consultation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

Sufficient Information

Sufficient information has been provided because:

- On 28 April 2026, Woodside made the Consultation Information Sheet available on the Woodside website.
- Woodside provided information on 29 April 2026 when consultation commenced. Woodside provided:

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  - A Summary Information Sheet developed specifically for Traditional Custodian groups and reviewed by a member of the Indigenous Affairs team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, a summary of 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 *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 the group'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.

Reasonable Period

A reasonable period for consultation in the preparation of the EP has been provided because:

- Woodside commenced consultation on this EP on 29 April 2026 and requested feedback by 28 May 2026 for the purposes of preparation of the EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside has addressed and responded to feedback for five 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 the group's preferred method of consultation and has consulted in a way that Woodside understands is appropriate for Traditional Custodian groups.
- Woodside has made information on this EP publicly available for five months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (6 May 2026) and National Indigenous Times (28 April 2026) advising of the proposed activities and requesting comments or feedback.
- Woodside's initial email about this EP on 29 April 2026:
  - 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 Indigenous Affairs Engagement team. Woodside also provided contact details for NOPSEMA.
  - Offered for Woodside to speak with members as well as the Board.
  - Asked the group to advise how it would like Woodside to engage and whether further information is required.

Outcomes of Consultation

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- Woodside met with Lombadina on 28 May 2026, however, Lombadina did not provide any feedback or information specific to the activities in this EP during consultation. 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 7.8 of the EP).

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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 issue.

5.1 Commonwealth and WA State Government departments or agencies – marine

5.1.1 Kimberley Ports

Summary of information provided and record of consultation for this EP:

- On 9 June 2026, Woodside emailed Kimberley Ports, on the recommendation of ASMA – Navigation Safety, of the proposed activity (Record of Consultation, reference 6.1.43), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans: Information for the community*'.
- On 2 July 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.3).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional measures are required.

Summary Report – Consultation Complete

- While Kimberley Ports 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 Kimberley Ports 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 Department of Water Environment Regulation (DWER)

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed DWER 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 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional measures are required.

Summary Report – Consultation Complete

- While DWER 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 DWER to provide feedback during the consultation process.

5.3 Other non-government groups or organisations (NGOs) or individuals

5.3.1 Australian Conservation Foundation (ACF)

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, 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 '*Consultation on offshore petroleum environment plans: Information for the community*'.
- On 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).

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Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional measures are required.
Summary Report – Consultation Complete			
• 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.			

5.3.2 Environs Kimberley

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed Environs Kimberley 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 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional measures are required.

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Summary Report – Consultation Complete
• While Environs Kimberley 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 Environs Kimberley to provide feedback during the consultation process.

5.4 Research institutes and local conservation groups or organisations

5.4.1 Australian Institute of Marine Science (AIMS), Commonwealth Scientific and Industrial Research Organisation (CSIRO), Western Australian Marine Science Institution (WAMSI), Curtin University, Edith Cowan University (ECU), Murdoch University, University of Western Australia (UWA) (Collectively: Research organisations)

Summary of information provided and record of consultation for this EP:

- On 28 April 2026, Woodside emailed Research organisations advising of the proposed activity (Record of Consultation, reference 6.1.18), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans: Information for the community*'.
- On 21 May 2026, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
No feedback, objections or claims 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 7.8.1 of the EP).	No changes or additional measures are required.

Summary Report – Consultation Complete
• While these research organisations are not relevant persons under regulation 25 of the Environment Regulations, Woodside considers it has still provided sufficient information and a reasonable period outside of regulatory requirements for these research organisations to provide feedback during the consultation process.

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5.5 Traditional custodians and nominated representatives

5.5.1 Gogolanyngor Aboriginal Corporation (GAC)

GAC is established under the *Native Title Act 1993 (Cth)* by the Jabirr Jabirr/Ngumbarl and Bindunbur people to represent the Jabirr Jabirr/Ngumbarl and Bindunbur people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Summary of information provided and record of consultation for this EP:

- On 29 April 2026, Woodside emailed GAC advising of the proposed activity (Record of Consultation, reference 6.1.27). The email included:
  - A Summary Information Sheet.
  - A link to the Consultation Information Sheet.
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines, Consultation Brochure,* and *Policy for Managing Gender-Restricted Information* and contact details.
  - A request for information on the group's preferred ways to engage with Woodside about the proposed activity, including the opportunity to meet face-to-face.
  - A request for feedback by 28 May 2026 for the purposes of preparation of the EP.
  - 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.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information.
  - A request for the group to provide information about the proposed activity to other individuals as required.
  - Information about an Underwater Cultural Heritage study survey of the proposed Browse to NWS Project Area.
- On 19 May 2026, Woodside emailed GAC a reminder about the proposed activity (SI Report B, reference 1.4.1). The email included:
  - A reference to the original consultation email for this EP sent on 28 April 2026, which included a Summary Information Sheet and a link to the Consultation Information Sheet.
  - A reminder that consultation for the preparation of the EP closes on 28 May 2026.
  - A request for information on how the group 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.
  - 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 28 May 2026, Woodside met with GAC in Broome (SI Report B, reference 1.4.2). Matters discussed included:
  - An overview of the proposed activity/EP and another unrelated activity.

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– Details about the timing of the proposed activity.

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of 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 7.8 of this EP).	No changes or additional measures are required.

Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environmental Regulations and consultation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

Sufficient Information

Sufficient information has been provided because:

- On 28 April 2026, Woodside made the Consultation Information Sheet available on the Woodside website.
- Woodside provided information on 29 April 2026 when consultation commenced. Woodside provided:
  - A Summary Information Sheet developed specifically for Traditional Custodian groups and reviewed by a member of the Indigenous Affairs team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, a summary of 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 *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 the group'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.

Reasonable Period

A reasonable period for consultation in the preparation of the EP has been provided because:

- Woodside commenced consultation on this EP on 29 April 2026 and requested feedback by 28 May 2026 for the purposes of preparation of the EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside has addressed and responded to feedback for five 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 the group's preferred method of consultation and has consulted in a way that Woodside understands is appropriate for Traditional Custodian groups.
- Woodside has made information on this EP publicly available for five months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (6 May 2026) and National Indigenous Times (28 April 2026) advising of the proposed activities and requesting comments or feedback.
- Woodside's initial email about this EP on 29 April 2026:
  - 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 Indigenous Affairs Engagement team. Woodside also provided contact details for NOPSEMA.
  - Offered for Woodside to speak with members as well as the Board.
  - Asked the group to advise how it would like Woodside to engage and whether further information is required.

Outcomes of Consultation

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- Woodside met GAC during the consultation period. Woodside provided feedback about this EP however GAC had no specific feedback about the EP.

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 7.8 of the EP).

5.5.2 La-Djarda Bay Aboriginal Corporation (La-Djarda Bay)

La-Djarda Bay Aboriginal Corporation originated from a separation from Nimanburr Aboriginal Corporation (Nimanburr).

Summary of information provided and record of consultation for this EP:

- On 29 April 2026, Woodside emailed La-Djarda Bay advising of the proposed activity (Record of Consultation, 6.1.30). The email included:
  - A Summary Information Sheet.
  - A link to the Consultation Information Sheet.
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines*, *Consultation Brochure*, and *Policy for Managing Gender-Restricted Information* and contact details.
  - A request for information on the group's preferred ways to engage with Woodside about the proposed activity, including the opportunity to meet face-to-face.
  - A request for feedback by 28 May 2026 for the purposes of preparation of the EP.

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- 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.
- Woodside's commitment to managing gender-restricted or other culturally sensitive information.
- A request for the group to provide information about the proposed activity to other individuals as required.
- Information about an Underwater Cultural Heritage study survey of the proposed Browse to NWS Project Area.

- Between 8 and 21 May 2026, Woodside and La-Djarda Bay had discussions and exchanged emails about meeting as part of ongoing engagement (SI Report B, references 1.6.1 – 1.6.4, 1.6.6 – -1.6.8).
- On 19 May 2026, Woodside emailed La-Djarda Bay a reminder about the proposed activity (SI Report B, reference 1.6.5). The email included:
  - A reference to the original consultation email for this EP sent on 29 April 2026, which included a Summary Information Sheet and a link to the Consultation Information Sheet.
  - A reminder that consultation for the preparation of the EP closes on 28 May 2026.
  - A request for information on how the group 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.
  - 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.

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of 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 7.8 of this EP).	No changes or additional measures are required.

Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environmental Regulations and consultation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

Sufficient Information

Sufficient information has been provided because:

- On 28 April 2026, Woodside made the Consultation Information Sheet available on the Woodside website.
- Woodside provided information on 29 April 2026 when consultation commenced. Woodside provided:

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  - A Summary Information Sheet developed specifically for Traditional Custodian groups and reviewed by a member of the Indigenous Affairs team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, a summary of 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 *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 the group'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.

Reasonable Period

A reasonable period for consultation in the preparation of the EP has been provided because:

- Woodside commenced consultation on this EP on 29 April 2026 and requested feedback by 28 May 2026 for the purposes of preparation of the EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside has addressed and responded to feedback for five 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 the group's preferred method of consultation and has consulted in a way that Woodside understands is appropriate for Traditional Custodian groups.
- Woodside has made information on this EP publicly available for five months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (6 May 2026) and National Indigenous Times (28 April 2026) advising of the proposed activities and requesting comments or feedback.
- Woodside's initial email about this EP on 29 April 2026:
  - 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 Indigenous Affairs Engagement team. Woodside also provided contact details for NOPSEMA.
  - Offered for Woodside to speak with members as well as the Board.
  - Asked the group to advise how it would like Woodside to engage and whether further information is required.

Outcomes of Consultation

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No feedback or information during consultation was provided for this EP.

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 7.8 of the EP).

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5.5.3 Nimanburr Aboriginal Corporation (Nimanburr)

Nimanburr is established under the *Native Title Act 1993 (Cth)* by the Nimanburr people to represent the Nimanburr people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values. Woodside assessed Nimanburr as not relevant for this EP but chose to consult with Nimanburr at Woodside's discretion.

Summary of information provided and record of consultation for this EP:

- On 29 April 2026, Woodside emailed Nimanburr advising of the proposed activity (Record of Consultation, reference 6.1.33). The email included:
  - A Summary Information Sheet.
  - A link to the Consultation Information Sheet.
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines, Consultation Brochure,* and *Policy for Managing Gender-Restricted Information* and contact details.
  - A request for information on the group's preferred ways to engage with Woodside about the proposed activity, including the opportunity to meet face-to-face.
  - A request for feedback by 28 May 2026 for the purposes of preparation of the EP.
  - 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.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information.
  - A request for the group to provide information about the proposed activity to other individuals as required.
  - Information about an Underwater Cultural Heritage study survey of the proposed Browse to NWS Project Area.
- On 19 May 2026, Woodside emailed Nimanburr a reminder about the proposed activity (SI Report B, reference 1.9.1). The email included:
  - A reference to the original consultation email for this EP sent on 29 April 2026, which included a Summary Information Sheet and a link to the Consultation Information Sheet.
  - A reminder that consultation for the preparation of the EP closes on 28 May 2026.
  - A request for information on how the group 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.
  - 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.
- **(1-3)** On 29 September 2026, BJNAC, Nimanburr, WAC and Joombarn-buru (a group not relevant to this EP) emailed a letter to Woodside (SI Report B, reference 1.9.2).

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- **(1-3)** On 5 October 2026, Woodside replied to BJNAC, Nimanburr, WAC and Joombarn-buru (a group not relevant to this EP) and informed the PBCs that their letter dated 29 September 2026 had been referred to another part of the Woodside business for response (SI Report B, reference 1.9.3).
- **(1-3)** On 6 October 2026, Woodside responded to BJNAC, Nimanburr, WAC and Joombarn-buru (a group not relevant to this EP) and addressed matters raised in correspondence dated 29 September 2026 (SI Report 1.9.4)
- **(1-3)** On 14 October 2026, Woodside received an email from Joombarn-buru (a group not relevant to this EP), BJNAC, Nimanburr and WAC (SI Report B, reference 1.9.5).
- **(1-3)** On 22 October 2026, Woodside replied to the email received on 14 October 2026 (SI Report B, reference 1.9.6).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Response	Inclusion in Environment Plan
(1) Woodside has not meaningfully consulted with Traditional Owners. Being contacted is not the same as being properly consulted. The timeframe for consultation did not give Traditional Owners a practical opportunity to respond. A lack of response to correspondence should not be interpreted as an absence of concern.	**(1)** Woodside rejects the assertion that it has not meaningfully consulted with Traditional Owners. Woodside has determined relevant Traditional Owner groups to consult with in accordance with its established consultation methodology. Woodside has met its regulatory obligations by providing relevant Traditional Owner groups: • Sufficient information. • A reasonable consultation period • A reasonable opportunity to provide feedback.	**(1)** Woodside does not agree that it has not provided meaningful opportunities for Traditional Owner groups assessed as relevant for this EP to provide feedback and engage in consultation. Woodside began consultation on 29 April 2026 and requested feedback by 28 May 2026 to support preparation of the EPs. Woodside provided a Summary Information Sheet specifically developed by Woodside's Indigenous Affairs Team, along with a link to a more detailed Consultation Information Sheet. Woodside also invited questions, requests for further information and offered to meet to discuss the proposed activities. Although the formal consultation period has closed, Woodside continues to receive feedback for the life of the EP which will be considered as part of ongoing engagement.	**(1)** No action required.
(2)	**(2)**	**(2)**	**(2)**

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Consultation with a PBC should not be treated as a substitute for engagement with the relevant Traditional Owners and cultural knowledge holders.	In accordance with Woodside's established methodology, Woodside engages Traditional Owners through their nominated representative bodies when consulting on EPs.	Woodside's consultation with Traditional Owners about Woodside's activities is guided by an established methodology designed to support compliance with applicable regulations and informed by the principles of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). Woodside engages Traditional Owners through their nominated representative bodies and invites them to share information with members.	No action required.
(3) Joombarn-buru has requested Woodside meet Joombarn-buru, BJNAC, Nimanburr, and WAC in Broome. The agenda would include discussion about a joint consultation approach and consultation framework regarding Woodside's offshore activities relevant to Kimberley Sea Country.	**(3)** Titleholders are not required to receive or enter into consultation framework agreements with relevant persons to satisfy consultation requirements. Woodside is willing to discuss proposals for consultation framework agreements. These discussions would occur in parallel to EP consultation.	**(3)** Woodside has agreed to meet Joombarn-buru, BJNAC, Nimanburr and WAC to discuss this EP and the wider Browse Project. Woodside has also requested that the groups inform it if would like information about any other Woodside activities that may impact the groups' functions, interests and activities. Any proposal regarding a consultation framework agreement would need to be considered through Woodside's established governance and approval processes. While Woodside is open to discussing a consultation framework agreement with the PBCs, it is not a prerequisite for EP consultation. Any discussions regarding a consultation framework agreement would occur separately and in parallel to EP consultation.	**(3)** No action required.

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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 7.8 of this EP).	Based on the engagement to date, no changes or additional measures are required.

Summary Report t – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environmental Regulations and consultation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

Sufficient Information

Sufficient information has been provided because:

- On 28 April 2026, Woodside made the Consultation Information Sheet available on the Woodside website.
- Woodside provided information on 29 April 2026 when consultation commenced. Woodside provided:
  - A Summary Information Sheet developed specifically for Traditional Custodian groups and reviewed by a member of the Indigenous Affairs team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, a summary of 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 *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 the group'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.

Reasonable Period

A reasonable period for consultation in the preparation of the EP has been provided because:

- Woodside commenced consultation on this EP on 29 April 2026 and requested feedback by 28 May 2026 for the purposes of preparation of the EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside has addressed and responded to feedback for five 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:

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- Woodside sought direction on the group's preferred method of consultation and has consulted in a way that Woodside understands is appropriate for Traditional Custodian groups.
- Woodside has made information on this EP publicly available for five months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (6 May 2026) and National Indigenous Times (28 April 2026) advising of the proposed activities and requesting comments or feedback.
- Woodside's initial email about this EP on 29 April 2026:
  - 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 Indigenous Affairs Engagement team. Woodside also provided contact details for NOPSEMA.
  - Offered for Woodside to speak with members as well as the Board.
  - Asked the group to advise how it would like Woodside to engage and whether further information is required.

Outcomes of Consultation

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- While feedback was received, there were no objections or claims relating specifically to the 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 7.8 of the EP).

5.5.4 Nyul Nyul Aboriginal Corporation (NNAC)

NNAC is established under the *Native Title Act 1993 (Cth)* by the Nyul Nyul people to represent the Nyul Nyul people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Summary of information provided and record of consultation for this EP:

- On 29 April 2026, Woodside emailed NNAC advising of the proposed activity (Record of Consultation, reference 6.1.35). The email included:
  - A Summary Information Sheet.
  - A link to the Consultation Information Sheet.
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines, Consultation Brochure,* and *Policy for Managing Gender-Restricted Information* and contact details.
  - A request for information on the group's preferred ways to engage with Woodside about the proposed activity, including the opportunity to meet face-to-face.
  - A request for feedback by 28 May 2026 for the purposes of preparation of the EP.

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- 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.
- Woodside's commitment to managing gender-restricted or other culturally sensitive information.
- A request for the group to provide information about the proposed activity to other individuals as required.
- Information about an Underwater Cultural Heritage study survey of the proposed Browse to NWS Project Area.

- On 3 May 2026, NNAC emailed Woodside about the proposed activity/EP and another unrelated activity, and requested a consultation meeting (SI Report B, reference 1.10.1).
- Between 4 May and 4 June 2026, Woodside and NNAC exchanged texts and emails about an in-person meeting to discuss the proposed activity/EP and another unrelated activity (SI Report B, references 1.10.2 – 1.10.6, 1.10.8 – 1.10.10).
- On 19 May 2026, Woodside emailed NNAC a reminder about the proposed activity (SI Report B, reference 1.10.7). The email included:
  - A reference to the original consultation email for this EP sent on 29 April 2026, which included a Summary Information Sheet and a link to the Consultation Information Sheet.
  - A reminder that consultation for the preparation of the EP closes on 28 May 2026.
  - A request for information on how the group 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.
  - 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 June 2026, NNAC emailed Woodside details of a planned meeting scheduled for 12 June 2026 (SI Report B, reference 1.10.11).
- On 12 June 2026, Woodside met NNAC in Broome (SI Report B, reference 1.10.12). During the meeting:
  - Woodside provided information about the proposed Browse Project. Items **(1-13)** were raised
  - Woodside addressed these items or took questions on notice **(1-13)**.
- On 7 July 2026, Woodside emailed NNAC responses to questions taken on notice **(6-7, 10-12)** during the meeting on 12 June 2026 (SI Report B, reference 1.10.13).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
(1) NNAC raised concerns about cultural artefacts being destroyed by industry.	**(1)** Woodside assesses the social, economic and cultural features of the environment in which it operates and puts in place mitigation measures in EPs. Woodside understands this concern to be raised in relation to	**(1)** Woodside explained that it seeks feedback from Traditional owners about cultural artefacts and values and includes mitigation measures in EPs.	**(1)** Cultural values including artefacts are in Section 4.9 of the EP.

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	onshore activities and is therefore not relevant to this activity.		
(2) NNAC enquired about Woodside's spill response procedures.	**(2)** Woodside has completed spill modelling for this EP and has included a First Strike Plan and other mitigation measures that would be implemented in the unlikely event of an unplanned incident.	**(2)** Woodside explained its spill response procedures to NNAC including: • The provision of spill response kits on all vessels. • Spill response training for staff. • Notification and consultation with Traditional Owners in the unlikely event of a spill.	**(2)** Emergency preparedness and response is detailed in Section 7.12 of the EP. The Oil Pollution First Strike Plan is in Appendix H of the EP.
(3) NNAC enquired about the benefits of the Browse Project including support for rangers.	**(3)** Woodside has committed to social investment in the Kimberley including funding for ISWAG to support ranger programs and dugong monitoring. The Browse Project may lead to further social investment in the future.	**(3)** Woodside provided details to NNAC about its social investment in ISWAG and noted that if the Browse Project goes ahead, there may be more opportunities for social investment in the Kimberley.	**(3)** No action required.
(4) NNAC asked if Woodside would invest in a blue carbon project in the Kimberley	**(4)** Woodside's carbon business was established in 2018* to develop and manage a portfolio of carbon credits. *Woodside Energy Carbon (Services) Pty Ltd was established in 2021.	**(4)** Woodside explained that it already engages in a number of activities relating to carbon including tree planting.	**(4)** No action required.
(5) NNAC enquired about environmental studies about seagrass and fauna that feed on it.	**(5)** Woodside completes an assessment of potential impacts to the environment in which it operates.	**(5)** Woodside explained the importance of surveying the environment where it operates. Woodside also provided details about its funding to ISWAG for dugong monitoring.	**(5)** Habitats and biological communities are described in Section 4 of the EP and where appropriate included controls are in Sections 6.8 and 6.9 of the EP.

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(6) [Redacted Sentence 1] NNAC enquired about how Woodside monitors whales during an activity and requested information about baseline studies into whale monitoring.	**(6)** Woodside acknowledged NNAC's feedback about whales. Woodside has mitigation measures in place relating to whales.	**(6)** [Redacted Sentence 2]. Woodside explained how marine fauna observers and trained crew members monitor whale activity. On 7 July 2026, Woodside emailed NNAC a 2024 Blue Whale Acoustic Monitoring Report with a high-level summary. Woodside also offered to support NNAC to run a workshop about cultural values relevant to the Browse Project. Woodside also invited NNAC to provide any further information about its cultural values.	**(6)** Cultural values are considered in Section 4.9 of the EP and where appropriate Woodside has included controls in Sections 6.8 and 6.9 , 6.11 of the EP.
(7) NNAC enquired about cooling and extraction systems for water and Woodside's use of desalination.	**(7)** Woodside acknowledged this enquiry during the meeting on 12 June 2026 and committed to providing details to NNAC.	**(7)** Woodside acknowledged this enquiry during the meeting on 12 June 2026 and committed to providing details to NNAC.	**(7)** Woodside has included controls in Section 6.8 of the EP.
(8) NNAC enquired about the introduction of invasive species, for example the black lipped oyster.	**(8)** Woodside has measures in place to prevent and mitigate the introduction of invasive species.	**(8)** Woodside explained that there were strict measures taken to prevent the introduction of invasive species at Scott Reef in accordance with Woodside's Invasive Marine Species (IMS) risk assessment process.	**(8)** Woodside has included controls in Section 6.9 of the EP.
(9) NNAC enquired about the proposed Browse Project trunkline, how it would be stabilised, what the diameter was and if it would be permanent.	**(9)** The proposed Browse Project trunkline is not part of this EP.	**(9)** Woodside explained how the pipeline would be constructed and its diameter. Woodside also explained the decommissioning process for Woodside assets.	**(9)** No action required.
(10)	**(10)** Woodside acknowledged this feedback. Woodside consults with Traditional	**(10)** Woodside explained that part of the consultation process was seeking	**(10)** Cultural values including Songlines have been recorded in 4.9.

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NNAC raised concerns about disruption to Songlines and connections to people further north.	Owner groups to learn about Songlines and cultural values so these can be included in the development of EPs.	feedback about cultural values to account for these in EP development. On 7 July 2026, Woodside emailed NNAC a response to questions taken on notice during their meeting on 12 June 2026. Woodside advised it would appreciate any further feedback from NNAC about Songlines and cultural values and offered to support NNAC to run a workshop about is cultural values relevant to the Browse Project.	
(11) NNAC queried the source of cultural values Woodside has on record for the group. NNAC advised it would need to workshop cultural values with families.	**(11)** Woodside sources information about cultural values through reviews of publicly available literature and consultation.	**(11)** Woodside explained that its record of cultural values for NNAC had been sourced from publicly available literature but welcomed additions and feedback to these values. On 7 July 2026, Woodside emailed NNAC its record of NNAC cultural values and invited the group to provide further feedback. Woodside also offered to support NNAC to run a workshop about its cultural values relevant to the Browse Project.	**(11)** No action required.
(12) NNAC requested a copy of Woodside's Cultural Safety Protocol.	**(12)** Woodside has procedures in place to protect sensitive cultural information.	**(12)** On 7 July 2026, Woodside emailed NNAC a response to questions taken on notice during their meeting on 12 June 2026. Woodside provided details of how it manages cultural information and explained that NNAC could share information directly with NOPSEMA if it preferred.	**(12)** No action required.
(13)	**(13)**	**(13)**	**(13)**

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NNAC suggested Woodside consider sharing information about the Browse Project with the Beagle Bay Futures Indigenous Corporation in future.	Woodside welcomes advice from Traditional Owner groups about other groups or people who may be interested in Woodside's activities.	Woodside has documented this feedback and will consider the Beagle Bay Futures Indigenous Corporation when completing relevancy assessments for future Browse Project EPs.	No action required.
While feedback has been received, there were no objections or claims.	Woodside has assessed the merits of feedback about 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 7.8 of this EP).	Based on the engagement to date, No changes or additional measures are required.

Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environmental Regulations and consultation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

Sufficient Information

Sufficient information has been provided because:

- On 28 April 2026, Woodside made the Consultation Information Sheet available on the Woodside website.
- Woodside provided information on 29 April 2026 when consultation commenced. Woodside provided:
  - A Summary Information Sheet developed specifically for Traditional Custodian groups and reviewed by a member of the Indigenous Affairs team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, a summary of 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 *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 the group'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.

Reasonable Period

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A reasonable period for consultation in the preparation of the EP has been provided because:

- Woodside commenced consultation on this EP on 29 April 2026 and requested feedback by 28 May 2026 for the purposes of preparation of the EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside has addressed and responded to feedback for five 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 the group's preferred method of consultation and has consulted in a way that Woodside understands is appropriate for Traditional Custodian groups.
- Woodside has made information on this EP publicly available for five months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (6 May 2026) and National Indigenous Times (28 April 2026) advising of the proposed activities and requesting comments or feedback.
- Woodside's initial email about this EP on 29 April 2026:
  - 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 Indigenous Affairs Engagement team. Woodside also provided contact details for NOPSEMA.
  - Offered for Woodside to speak with members as well as the Board.
  - Asked the group to advise how it would like Woodside to engage and whether further information is required.

Outcomes of Consultation

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- Woodside assessed and responded to feedback from the group and as a result of the feedback, Woodside updated Section 4.9 of the EP to include information provided about cultural values.
- 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 7.8 of the EP).

5.5.5 Wunambal Gaambera Aboriginal Corporation (WGAC)

WGAC is established under the *Native Title Act 1993 (Cth)* by the Wanambal Gaambera (Uunguu) people to represent their communal interests, including the management and protection of cultural values.

Summary of information provided and record of consultation for this EP:

- On 10 August 2026, Woodside emailed WGAC advising of the proposed activity (Record of Consultation, reference 6.1.38). The email included:

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- A Summary Information Sheet.
- A link to the Consultation Information Sheet.
- An overview of the proposed activity.
- Links to the NOPSEMA *Consultation Guidelines, Consultation Brochure,* and *Policy for Managing Gender-Restricted Information* and contact details.
- A request for information on the group's preferred ways to engage with Woodside about the proposed activity, including the opportunity to meet face-to-face.
- A request for feedback by 10 September 2026 for the purposes of preparation of the EP.
- 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.
- Woodside's commitment to managing gender-restricted or other culturally sensitive information.
- A request for the group to provide information about the proposed activity to other individuals as required.
- Information about an Underwater Cultural Heritage study survey of the proposed Browse to NWS Project Area.

• On 24 August 2026, Woodside emailed WGAC a reminder about the proposed activity (SI Report B, reference 1.15.1). The email included:

- A reference to the original consultation email for this EP sent on 10 August 2026, which included a Summary Information Sheet and a link to the Consultation Information Sheet.
- A reminder that consultation for the preparation of the EP closes on 10 September 2026.
- A request for information on how the group 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.
- 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.

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	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 7.8 of this EP).	No changes or additional measures are required.
Summary Report – Consultation Complete			
Woodside has discharged its obligations for consultation under regulation 25 of the Environmental Regulations and consultation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:			

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Sufficient Information

Sufficient information has been provided because:

- On 28 April 2026, Woodside made the Consultation Information Sheet available on the Woodside website.
- Woodside provided information on 10 August 2026 when consultation commenced. Woodside provided:
  - A Summary Information Sheet developed specifically for Traditional Custodian groups and reviewed by a member of the Indigenous Affairs team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, a summary of 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 *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 the group'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.

Reasonable Period

A reasonable period for consultation in the preparation of the EP has been provided because:

- Woodside commenced consultation on this EP on 10 August 2026 and requested feedback by 10 September 2026 for the purposes of preparation of the EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside has addressed and responded to feedback for five 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 the group's preferred method of consultation and has consulted in a way that Woodside understands is appropriate for Traditional Custodian groups.
- Woodside has made information on this EP publicly available for five months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (6 May 2026) and National Indigenous Times (28 April 2026) advising of the proposed activities and requesting comments or feedback.
- Woodside's initial email about this EP on 10 August 2026:
  - 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 Indigenous Affairs Engagement team. Woodside also provided contact details for NOPSEMA.
  - Offered for Woodside to speak with members as well as the Board.
  - Asked the group to advise how it would like Woodside to engage and whether further information is required.

Outcomes of Consultation

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

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- No feedback or information during consultation was provided for this EP.
- 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 7.8 of the EP).

5.5.6 Yawuru Aboriginal Corporation (Yawuru)

Yawuru is established under the *Native Title Act 1993 (Cth)* by the Yawuru people to represent the Yawuru people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Summary of information provided and record of consultation for this EP:

- On 29 April 2026, Woodside emailed Yawuru advising of the proposed activity (Record of Consultation, reference 6.1.41). The email included:
  - A Summary Information Sheet.
  - A link to the Consultation Information Sheet.
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines, Consultation Brochure,* and *Policy for Managing Gender-Restricted Information* and contact details.
  - A request for information on the group's preferred ways to engage with Woodside about the proposed activity, including the opportunity to meet face-to-face.
  - A request for feedback by 28 May 2026 for the purposes of preparation of the EP.
  - 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.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information.
  - A request for the group to provide information about the proposed activity to other individuals as required.
  - Information about an Underwater Cultural Heritage study survey of the proposed Browse to NWS Project Area.
- On 19 May 2026, Woodside emailed Yawuru a reminder about the proposed activity (SI Report B, reference 1.16.1). The email included:
  - A reference to the original consultation email for this EP sent on 28 April 2026, which included a Summary Information Sheet and a link to the Consultation Information Sheet.
  - A reminder that consultation for the preparation of the EP closes on 28 May 2026.
  - A request for information on how the group 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.

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– 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.

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of 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 7.8 of this EP).	No changes or additional measures are required.

Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environmental Regulations and consultation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

Sufficient Information

Sufficient information has been provided because:

- On 28 April 2026, Woodside made the Consultation Information Sheet available on the Woodside website.
- Woodside provided information on 29 August 2026 when consultation commenced. Woodside provided:
  - A Summary Information Sheet developed specifically for Traditional Custodian groups and reviewed by a member of the Indigenous Affairs team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, a summary of 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 *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 the group'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.

Reasonable Period

A reasonable period for consultation in the preparation of the EP has been provided because:

- Woodside commenced consultation on this EP on 29 April 2026 and requested feedback by 28 September 2026 for the purposes of preparation of the EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside has addressed and responded to feedback for five months, demonstrating a "reasonable period" of consultation.

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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 the group's preferred method of consultation and has consulted in a way that Woodside understands is appropriate for Traditional Custodian groups.
- Woodside has made information on this EP publicly available for five months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (6 May 2026) and National Indigenous Times (28 April 2026) advising of the proposed activities and requesting comments or feedback.
- Woodside's initial email about this EP on 29 August 2026:
  - 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 Indigenous Affairs Engagement team. Woodside also provided contact details for NOPSEMA.
  - Offered for Woodside to speak with members as well as the Board.
  - Asked the group to advise how it would like Woodside to engage and whether further information is required.

Outcomes of Consultation

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No feedback or information during consultation was provided for this EP.
- 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 7.8 of the EP)

5.5.7 Joombarn-buru Aboriginal Corporation (Joombarn-buru)

Joombarn-buru is established under the *Native Title Act 1993* (Cth). The Determination Area is an inland region which does not overlap nor is coastally adjacent to the EMBA for this EP. Accordingly, Woodside does not consider Joombarn-buru relevant for this EP. Woodside has received joint correspondence from Joombarn-buru, BJNAC, Nimanburr (which Woodside chose to contact, but is not relevant for this EP) and WAC regarding the adequacy of consultation for this EP. The correspondence did not include specific feedback about the activities outlined in this EP and focussed on a request for a consultation framework agreement. After being contacted by Joombarn-buru, Woodside provided the group with a link to the Consultation Information Sheet for this EP and invited Joombarn-buru to provide information about any of its functions, interests or activities that may be affected by the proposed activities under this EP. To date, Joombarn-buru has not provided Woodside with this information.

Summary of information provided and record of consultation for this EP:

- **(1-3)** On 7 September 2026, Woodside received an email from Joombarn-buru (SI Report 3.1.1). The email stated the sender also represented BJNAC and WAC.

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- **(1-3)** On 17 September 2026, Woodside responded to Joombarn-buru's email of 7 September 2026 (SI Report 3.1.2).
- **(1-3)** On 29 September 2026, Joombarn-buru sent Woodside an email signed by the chairs of Joombarn-buru, BJNAC, Nimanburr (which Woodside chose to contact but is not relevant to this EP) and WAC (SI Report B, reference 3.1.3).
- **(1-3)** On 5 October 2026, Woodside replied to correspondence received on 29 September 2026 and informed the PBCs that their letter had been referred to another part of the Woodside business for response (SI Report B, reference 3.1.4).
- **(1-3)** On 6 October 2026, Woodside responded to Joombarn-buru, BJNAC, Nimanburr (which Woodside chose to contact but is not relevant to this EP) and WAC and addressed matters raised in correspondence dated 29 September 2026 (SI Report B 3.1.5)
- **(1-3)** On 14 October 2026, Woodside received an email from Joombarn-buru, BJNAC, Nimanburr (which Woodside chose to contact but is not relevant to this EP) and WAC (SI Report B, reference 3.1.7).
- **(1-3)** On 22 October 2026, Woodside replied to the email received on 14 October 2026 (SI Report B, reference 3.1.7).

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Response	Inclusion in Environment Plan
(1) Woodside has not meaningfully consulted with Traditional Owners. Being contacted is not the same as being properly consulted. The timeframe for consultation did not give Traditional Owners a practical opportunity to respond. A lack of response to correspondence should not be interpreted as an absence of concern.	**(1)** Woodside rejects the assertion that it has not meaningfully consulted with Traditional Owners. Woodside has determined relevant Traditional Owner groups to consult with in accordance with its established consultation methodology. Joombarn-buru was not identified as relevant. Woodside has met its regulatory obligations by providing relevant Traditional Owner groups: • Sufficient information. • A reasonable consultation period • A reasonable opportunity to provide feedback.	**(1)** Woodside does not agree that it has not provided meaningful opportunities for Traditional Owner groups assessed as relevant for this EP to provide feedback and engage in consultation. Joombarn-buru was not determined to be relevant to this EP. Woodside began consultation on 29 April 2026 with relevant groups and requested feedback by 28 May 2026 to support preparation of the EPs. Woodside provided a Summary Information Sheet specifically developed by Woodside's Indigenous Affairs Team, along with a link to a more detailed Consultation Information Sheet. Woodside also invited questions, requests for further information and offered to meet to discuss the proposed activities.	**(1)** No action required.

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		After being contacted by Joombarn-buru, Woodside provided the PBC with a link to information for this EP and invited Joombarn-buru to provide information about why it believes that it has functions, interests or activities that may be affected by the proposed activities under this EP. To date, Joombarn-buru has not provided Woodside with this information. Although the formal consultation period has closed, Woodside continues to receive feedback for the life of the EP which will be considered as part of ongoing engagement.	
(2) Consultation with a PBC should not be treated as a substitute for engagement with the relevant Traditional Owners and cultural knowledge holders.	**(2)** In accordance with Woodside's established methodology, Woodside engages Traditional Owners through their nominated representative bodies when consulting on EPs.	**(2)** Woodside's consultation with Traditional Owners about Woodside's activities is guided by an established methodology designed to support compliance with applicable regulations and informed by the principles of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). Woodside engages Traditional Owners through their nominated representative bodies and invites them to share information with members.	**(2)** No action required.
(3) Joombarn-buru has requested Woodside meet Joombarn-buru, BJNAC, Nimanburr, and WAC in Broome. The agenda would include discussion about a joint consultation approach and consultation framework regarding	**(3)** Titleholders are not required to receive or enter into consultation framework agreements with relevant persons to satisfy consultation requirements. Woodside is willing to discuss proposals for consultation framework agreements.	**(3)** Woodside has agreed to meet Joombarn-buru, BJNAC, Nimanburr and WAC to discuss this EP and the wider Browse Project. Woodside has also requested that the groups inform it if would like information about any other Woodside activities that may impact the	**(3)** No action required.

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Woodside's offshore activities relevant to Kimberley Sea Country.	These discussions would occur in parallel to EP consultation.	groups' functions, interests and activities. Any proposal regarding a consultation framework agreement would need to be considered through Woodside's established governance and approval processes. While Woodside is open to discussing a consultation framework agreement with the PBCs, it is not a prerequisite for EP consultation. Any discussions regarding a consultation framework agreement would occur separately and in parallel to EP consultation.	
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 7.8 of this EP).	Based on the engagement to date, no changes or additional measures are required.
Summary Report – Consultation Complete			
Woodside has discharged its obligations for consultation under regulation 25 of the Environmental Regulations and consultation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically: Woodside's methodology did not identify Joombarn-buru as relevant to this EP and therefore did not send Joombarn-buru consultation material when consultation began in April 2026. After being contacted by Joombarn-buru in September 2026, Woodside sent Joombarn-buru a link to the Consultation Information Sheet and invited the group to provide information about why it believes that it has functions, interests or activities that may be affected by the proposed activities under this EP. To date, Joombarn-buru has not provided Woodside with this information or any feedback relating specifically to the activity.			

5.6 Other Indigenous Groups

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5.6.1 Indigenous Salt Water Advisory Group (ISWAG)

ISWAG is a Kimberley-based Indigenous organisation that acts as a collective supporting coastal Prescribed Body Corporates (PBCs) and ranger groups, with a focus on marine conservation, cultural preservation and Indigenous-led saltwater management initiatives. ISWAG plays a regional coordination role, including facilitating collaboration between Traditional Owner groups on sea country matters and supporting ranger programs and environmental monitoring activities.

Summary of information provided and record of consultation for this EP:

- On 29 April 2026, Woodside emailed ISWAG advising of the proposed activity (Record of Consultation, reference 6.1.28). The email included:
  - A Summary Information Sheet.
  - A link to the Consultation Information Sheet.
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines, Consultation Brochure,* and *Policy for Managing Gender-Restricted Information* and contact details.
  - A request for information on the group's preferred ways to engage with Woodside about the proposed activity, including the opportunity to meet face-to-face.
  - A request for feedback by 28 May 2026 for the purposes of preparation of the EP.
  - 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.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information.
  - A request for the group to provide information about the proposed activity to other individuals as required.
  - Information about an Underwater Cultural Heritage study survey of the proposed Browse to NWS Project Area.
- On 30 April 2026, Woodside and ISWAG exchanged emails during which ISWAG made an enquiry **(1)** and Woodside replied **(1)** (SI Report B, references 1.5.1 – 1.5.2).
- On 19 May 2026, Woodside emailed ISWAG a reminder about the proposed activity (SI Report B, reference 1.5.3). The email included:
  - A reference to the original consultation email for this EP sent on 29 April 2026, which included a Summary Information Sheet and a link to the Consultation Information Sheet.
  - A reminder that consultation for the preparation of the EP closes on 28 May 2026.
  - A request for information on how the group 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.
  - 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 27 May 2026, Woodside met ISWAG (SI Report B, reference 1.5.4). During the meeting:
  - Woodside provided an overview of the proposed activity/EP and another unrelated activity.
  - Woodside reiterated that feedback could be received throughout the life of an EP.

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– ISWAG enquired about **(1)** and Woodside responded **(1)**.
– ISWAG provided feedback **(2)** and Woodside provided further information **(2)**.

Summary of Feedback, Objection or Claim	Woodside's Assessment of Merits of Feedback, Objection or Claim about the adverse impact of the activity	Woodside's Statement of Response	Inclusion in Environment Plan
(1) ISWAG enquired about Woodside's engagement with Kimberley PBCs.	**(1)** Woodside's consultation with Kimberley PBCs is detailed in App F.	**(1)** Woodside provided details about engagement with Kimberley PBCs relating to this EP and consultation overall.	**(1)** No action required.
(2) During a meeting on 27 May 2026, ISWAG advised it would speak to its members about providing cultural values to Woodside.	**(2)** Woodside incorporates cultural values provided by groups into its EPs.	**(2)** At the time of submission, ISWAG had not provided cultural values to Woodside. Should ISWAG provide cultural values to Woodside during the life of the EP, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.8 of this EP).	**(2)** No action required.
While feedback has been received, there were no objections or claims.	Woodside has assessed the merits of feedback about 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 7.8 of this EP).	Based on the engagement to date, No changes or additional measures are required.
Summary Report – Consultation Complete			
Woodside has discharged its obligations for consultation under regulation 25 of the Environmental Regulations and consultation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically: **Sufficient Information**			

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Sufficient information has been provided because:

- On 28 April 2026 Woodside made the Consultation Information Sheet available on the Woodside website.
- Woodside provided information on 29 April 2026 when consultation commenced. Woodside provided:
  - A Summary Information Sheet developed specifically for Traditional Custodian groups and reviewed by a member of the Indigenous Affairs team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, a summary of 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 *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 the group'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.

Reasonable Period

A reasonable period for consultation in the preparation of the EP has been provided because:

- Woodside commenced consultation on this EP on 29 April 2026 and requested feedback by 28 May 2026 for the purposes of preparation of the EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside has addressed and responded to feedback for five 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 the group's preferred method of consultation and has consulted in a way that Woodside understands is appropriate for Traditional Custodian groups.
- Woodside has made information on this EP publicly available for five months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (6 May 2026) and National Indigenous Times (28 April 2026) advising of the proposed activities and requesting comments or feedback.
- Woodside's initial email about this EP on 29 April 2026:
  - 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 Indigenous Affairs Engagement team. Woodside also provided contact details for NOPSEMA.
  - Offered for Woodside to speak with members as well as the Board.
  - Asked the group to advise how it would like Woodside to engage and whether further information is required.

Outcomes of Consultation

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

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- During a meeting on 27 May 2026, ISWAG advised it would speak to its members about providing information about its cultural values to Woodside. At the time of submission this information had not been provided to Woodside.
- 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 7.8 of the EP).

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6. RECORD OF CONSULTATION

6.1 Initial consultation

6.1.1 Consultation Information Sheet

Woodside Energy

Consultation Information Sheet
April 2026

Browse to NWS Project Geophysical and Geotechnical Surveys Environment Plan (Commonwealth)

Browse Basin, North West Australia

Activity overview

The Browse to North West Shelf (NWS) Project Geophysical and Geotechnical Surveys Environment Plan (EP) (Commonwealth) is a five-year EP which covers:

- Geophysical and geotechnical surveys within two Operational Areas involving seafloor sampling and scanning
- Survey vessel operations.

Context

Woodside has previously undertaken GPGT surveys in the Browse Basin as part of earlier project concepts. A series of new GPGT surveys are proposed to support potential future activities associated with the Browse to NWS Project. These surveys will be conducted across both Commonwealth and State waters and are organised into three Environment Plans (EPs):

- Browse to NWS Project GPGT Surveys EP (Commonwealth) – the subject of this consultation information sheet
- Browse to NWS Project GPGT Surveys EP (State)
- Browse to NWS Project Trunkline GPGT Surveys EP (Commonwealth).

Survey data is intended to inform the design and installation of the proposed trunkline, pipelines and umbilicals, subsea structures, and the mooring systems for the two proposed floating production storage and offtake (FPSO) facilities and mobile offshore drilling units (MODUs).

Data may also contribute to assessments of existing infrastructure, support environmental and heritage studies, and assist in planning potential future project activities. More information is found on **Page 2.**

Location

In Commonwealth waters **(Figure 5):**

- ~ 430 km north-northwest of Broome (Operational Area A)
- ~ 370 km north-northwest of Broome (Operational Area B).

Water depth

~ 350 m - 900 m deep.

Timing and duration

- Anticipated to commence from – Q3 2027.
- Surveys anticipated to be completed over several multi-week campaigns (typically 20-60 days in duration) split over the 5-year duration of the EP.
- Estimated to take up to a maximum of 90 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day.
- Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.

Joint Venture

- Operator – Woodside Browse Pty Ltd
- Joint Venture participants - BP Developments Australia Pty Ltd, Japan Australia LNG (MIMI Browse) Pty Ltd, and PetroChina International Investment (Australia) Pty Ltd.

We would like to hear from you

We would like relevant persons whose functions, interests or activities 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.

Woodside must consult relevant persons when developing an EP to confirm current measures or identify additional measures, which could lessen or avoid potential adverse effects of the proposed activity on the environment.

Woodside aims to ensure the proposed activity is consistent with the principles of ecologically sustainable development, by which the environmental impacts and risks of the activity are reduced to as low as reasonably practicable (ALARP) and of an acceptable level.

If you are an individual, organisation or community group and believe your functions, interests or activities may be impacted by the activities under this EP, we would like your feedback by **28 May 2026**.

feedback@woodside.com
Toll free: 1800 442 977
woodside.com

A summary of the activity and location is found in Table **1** and **2**.

Woodside Energy recognises Aboriginal and Torres Strait Islander peoples as Australia's First Peoples. We acknowledge their connection to land, waters and the environment and pay our respects to ancestors and Elders, past and present. We extend this recognition and respect to Indigenous Peoples and communities around the world.

1 Browse to NWS Project GPGT Surveys EP (Commonwealth) | April 2026

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About geophysical and geotechnical surveys

Geophysical and geotechnical surveys are necessary preliminary work for the feasibility of the proposed Browse to NWS Project.

Survey information supports safe and efficient well and infrastructure design, helps reduce technical and environmental risks, and informs regulatory approvals and investment decisions.

Geophysical surveys are non-intrusive surveys that map the seafloor and the geology beneath it, while geotechnical surveys may take physical samples of seabed materials.

Woodside undertakes these surveys to inform engineering design and help minimise potential impacts on the marine environment.

How do geophysical surveys differ from seismic surveys?

Geophysical surveys typically have a smaller spatial footprint and shorter duration than seismic surveys, as they use different sound sources designed to map shallow geological layers of the seabed, whereas seismic surveys use higher-intensity sound sources to image deeper geological structures.

Geophysical surveys

Vessels carrying out geophysical surveys gather information by using various types of sonar equipment which use different frequencies of sound. Examples of equipment typically used for these surveys include, but are not limited to, multi-beam echo sounders, side scan sonar, magnetometers, sub bottom profilers, and underwater cameras to map the seafloor and identify potential hazards or features.

Geotechnical surveys

Vessels carrying out geotechnical surveys test seabed soil and rock and the shallow geology beneath the seabed using sampling and testing equipment. This may include various types of sampling such as core sampling and grab sampling, and in situ testing such as cone penetrometer testing.

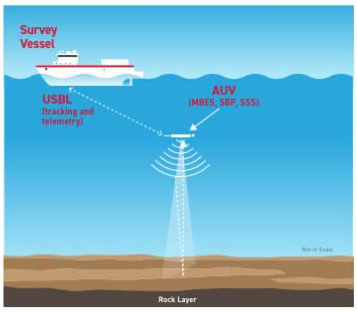


Figure 1: Example of deployment methods for AUV geophysical survey equipment.

***USBL** - Ultra-short baseline positioning system, **AUV** - Autonomous underwater vehicle, **MBES** - Multibeam echosounder, **SBP** - Sub-bottom profiler, **SSS** - Side scan sonar*

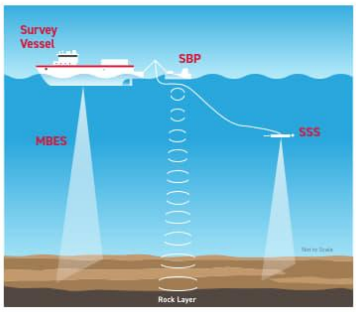


Figure 2: Example of deployment methods for towed geophysical survey equipment.

***MBES** - Multibeam echosounder, **SBP** - Sub-bottom profiler **SSS** - Side scan sonar*

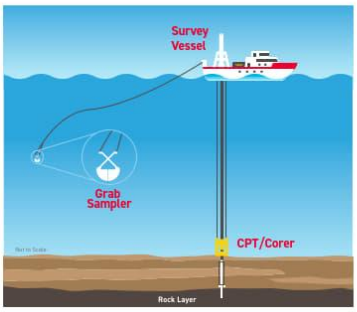


Figure 3: Example of deployment methods for geotechnical survey equipment.

***CPT/Corer** - Cone penetrometer test / Core sampler*

Indicative images not to scale.

Proposed Browse to NWS Project

The proposed Browse to NWS Project will deliver natural gas from the Torosa, Calliance and Brecknock gas fields, located approximately 425 km north of Broome in the offshore Browse Basin, to the existing Karratha Gas Plant. The gas will be transported via an approximately 900 km trunkline connected to two FPSO facilities.

Woodside plans to collect GPGT data to inform potential future activities associated with the Browse to NWS Project. The activities will be undertaken across both State and Commonwealth waters and are covered by three separate EPs (**Figure 4**):

- **Browse to NWS Project Geophysical and Geotechnical Surveys EPs** – a Commonwealth and a State EP for survey work in the vicinity of the Torosa, Calliance and Brecknock gas fields (see blue and green box in legend in map on **page 3**).
- **Browse to NWS Project Trunkline Geophysical and Geotechnical Surveys EP** – a Commonwealth EP for survey work in the vicinity of the proposed trunkline (see yellow box in legend in map on **page 3**).

These EPs are focused on the GPGT surveys only. It is expected that additional EPs will be required as the proposed Browse to NWS Project progresses for a range of project and operational activities.

The proposed Browse to NWS Project is currently being separately assessed by State and Commonwealth Regulators under the *Environment Protection Act 1986* (WA) and *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act). The GPGT surveys discussed within this consultation information sheet associated with the proposed Browse to NWS Project in Commonwealth waters are regulated by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) under the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* and associated regulations. In State waters, these GPGT activities are regulated by the Department of Mines, Petroleum and Exploration (DMPE) under the *Petroleum (Submerged Lands) Act 1982* and associated regulations.

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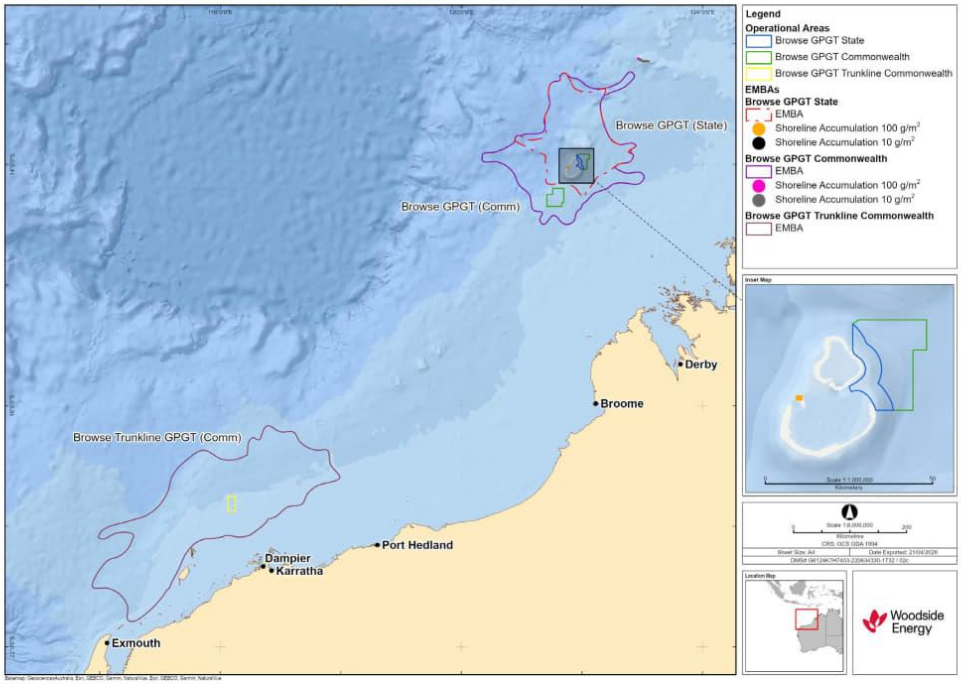


Figure 4: EMBA and Operational Area for the Browse to NWS Project GPGT Surveys Commonwealth and State EPs and for the Browse to NWS Project Trunkline GPGT Surveys EP.

Key measures incorporated into the EPs for the proposed Browse GPGT surveys:

Hydrocarbon spill measures

Woodside's approach to marine pollution preparedness includes having a comprehensive hydrocarbon spill response plan supported by a 24/7 response capability. The Oil Pollution Emergency Plan (OPEP) addresses activity-specific risks and potential impacts from a hydrocarbon spill and demonstrates how Woodside plans to respond to and manage a hydrocarbon spill effectively.

Fauna management

Vessels conducting GPGT surveys will implement a range of measures to minimise potential impacts to marine fauna and the marine environment. These measures are consistent with regulatory requirements and, where practicable, exceed minimum compliance.

Key management measures include vessel speed restrictions, underwater noise management, consideration of seasonal presence of fauna, light reduction measures and the implementation of regulations and guidance for interactions with marine fauna.

Green turtles

Some parts of the proposed survey area overlap or are close to habitat used by green turtles, particularly around Scott Reef, recognised as an important nesting and internesting area.

Woodside is required to manage and minimise impacts to marine turtles through mitigation measures which demonstrate that potential impacts are avoided or reduced to acceptable and as low as reasonably practicable (ALARP) levels before EPs can be accepted.

Mitigation measures include vessel speed management, implementation of regulations and guidance for interactions with marine fauna to avoid vessel collisions, underwater noise management and light reduction measures to avoid impacts to hatchlings and nesting turtles.

Pygmy blue whales

Some parts of the proposed survey area overlap or are close to habitat used by pygmy blue whales, particularly around Scott Reef, recognised as a possible foraging biologically important area (BIA).

Woodside is required to manage and minimise impacts to pygmy blue whales through avoidance and mitigation measures which demonstrate that potential impacts are avoided or reduced to ALARP levels before EPs can be accepted.

Mitigation measures include vessel speed management, implementation of regulations and guidance for interactions with marine fauna to avoid vessel collisions, underwater noise management such as limiting activities with potential noise impacts within the pygmy blue whale BIA during likely foraging periods as far as practicable, prestart observations and adaptive management during noise generating activities.

Invasive Marine Species management

In accordance with the *Australian Biosecurity Act 2015* (Cth), Woodside implements rigorous procedures to prevent and manage the introduction of invasive marine species through its Invasive Marine Species Management Plan. The plan includes a risk assessment process for vessels undertaking activities and applies commensurate risk mitigation measures such as treatment of internal systems, invasive marine species inspections and cleaning.

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Activity Location

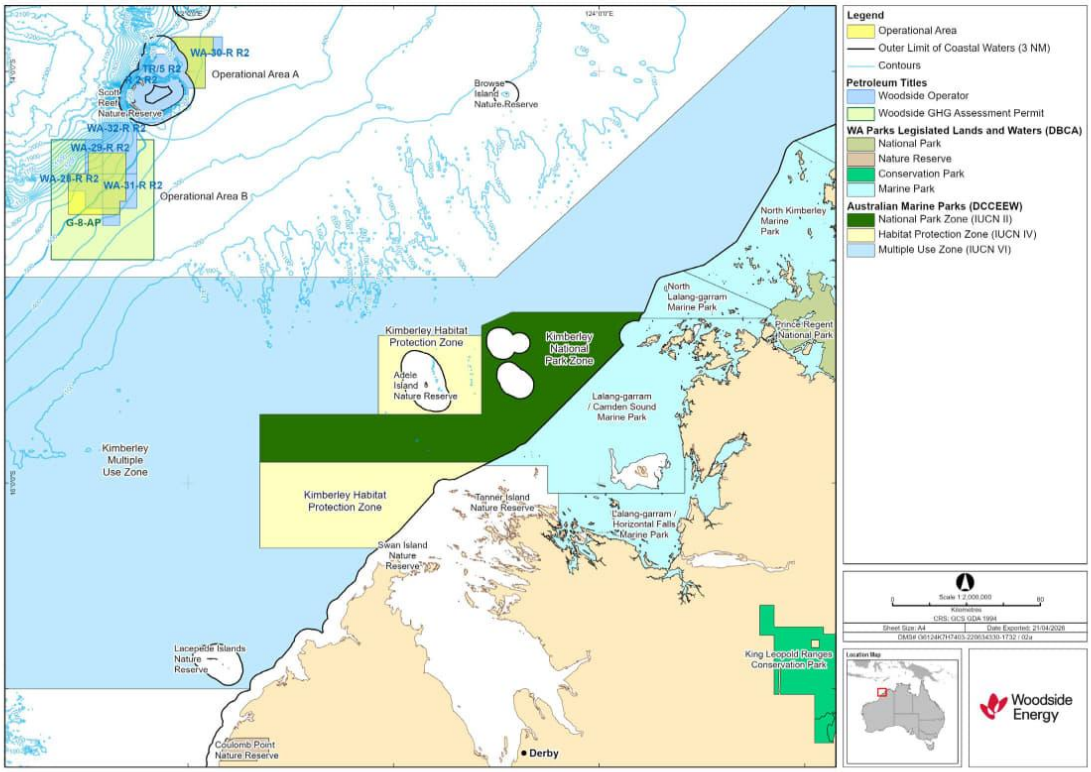


Figure 5. Location of the activity, including Operational Areas of the Browse to NWS Project GPGT Surveys EP (Commonwealth).



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Table 1 – Activity and location summary

Browse to NWS Project GPGT Surveys EP (Commonwealth)	
Activity details	**Geophysical surveys:** • Geophysical surveys in this GPGT Survey Program involve acoustic measurements to characterise the seabed features and sub-seabed sediment types. • Geophysical surveys within the Operational Area using: - Multibeam echosounder (MBES), single beam echo sounder, altimeter - Side scan sonar (SSS) including variants such as multi-aperture and synthetic aperture sonar - Magnetometer/gradiometer and pipe tracker - Sub-bottom profiler (SBP), such as but not limited to boomer, sparker, pinger, chirp, and parametric SBP. **Geotechnical surveys:** • The geotechnical surveys will be performed using standard industry equipment and will consist of in situ testing and the recovery of soil/rock samples at locations within the Operational Area to ground truth existing geophysical data and provide geotechnical data for engineering design. • Geotechnical surveys within the Operational Area using: - Box corer/grab sampler - Shallow cores and probes: piston core/gravity core/vibrocore - Borehole sampling/coring/in situ testing - Cone penetrometer testing (CPT/PCPT/CPTu). **Other survey equipment being used:** - Water sampler - Sound velocity sensor/multi-parameter conductivity-temperature-depth profiler - Ultra-short baseline (USBL) positioning system - Doppler velocity log and inertial navigation system - Underwater camera - Underwater laser scanner - Remotely operated vehicle (ROV) - Autonomous underwater vehicle (AUV).
Titles	• Petroleum licences: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R. • Greenhouse Gas permit G-8-AP.
Vessels	• Multi-purpose vessels, uncrewed surface vessels, geotechnical drilling vessels and support vessels.
Operational Area and exclusion zones	• The exact location of the proposed surveys within the Operational Areas may vary. • Operational Areas are within Commonwealth waters. • A temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements.
Communication with mariners	• Commercial fishers and other marine users are permitted to use the Operational Area but should take care around operations by adhering to standard navigation rules and remain clear of the exclusion zone. • Marine notices will be issued prior to activity commencement to alert vessels which may be operating in waters nearby.
Distance to nearest marine park/nature reserve	• Scott Reef Nature Reserve – 6 km south-west of Operational Area A, ~ 23 km north-east of Operational Area B. • Kimberley Multiple Use Zone ~ 101 km south of Operational Area A, ~ 33 km south of Operational Area B.

Table 2 – Approximate locations of Browse to NWS Project GPGT Surveys EP (Commonwealth) Operational Area

Location	Water Depth (m)	Latitude	Longitude	Titles
Survey Area				
Operational Area A Offshore area in Commonwealth waters	~ 400 - 600 m	13° 49' 55.00" S	122° 07' 19.52" E	WA-30-R
		13° 54' 54.94" S	122° 07' 19.52" E	
		13° 54' 54.94" S	122° 05' 04.52" E	
		14° 04' 54.94" S	122° 05' 04.52" E	
		14° 04' 54.94" S	122° 01' 49.75" E	
		Then follow Commonwealth/State boundary to:		
		13° 50' 35.64" S	121° 55' 04.53" E	
		13° 49' 55.00" S	121° 56' 04.52" E	
		13° 49' 55.00" S	122° 07' 19.52" E	
Operational Area B: Offshore area in Commonwealth waters	~ 350 - 900 m	14° 23' 47.55" S	121° 41' 53.95" E	WA-28-R, WA-29-R, WA-31-R, WA-32-R, G-8-AP
		14° 37' 53.02" S	121° 41' 53.95" E	
		14° 37' 53.02" S	121° 40' 04.54" E	
		14° 41' 47.03" S	121° 40' 04.54" E	
		14° 41' 47.03" S	121° 25' 04.55" E	
		14° 29' 55.02" S	121° 25' 04.55" E	
		14° 29' 55.02" S	121° 30' 56.41" E	
		14° 23' 47.55" S	121° 30' 56.41" E	
		14° 23' 47.55" S	121° 41' 53.95" E	

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Environment that May Be Affected (EMBA)

The EMBA is the largest geographic area where an unplanned event could potentially have an environmental consequence. The broadest extent of the EMBA takes into consideration planned activities and unplanned events. The EMBA was developed combining numerous modelling outputs based on highly unlikely releases of hydrocarbons to the environment. The modelling scenario that informs the EMBA is vessel collision. The EMBA is depicted in **Figure 6**.

The EMBA does not represent the extent of the predicted impact of a highly unlikely hydrocarbon release. Rather, the EMBA represents the merged area of many possible paths that a highly unlikely hydrocarbon release could travel, which depends on the weather and ocean conditions at the time of a release. This means that in the highly unlikely event that a hydrocarbon release does occur, the whole EMBA would not be affected. The specific and minimal part of the EMBA that is affected will only be known if there is a release. To learn more about an EMBA, please see the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) video on oil spill modelling at **www.nopsema.gov.au**.

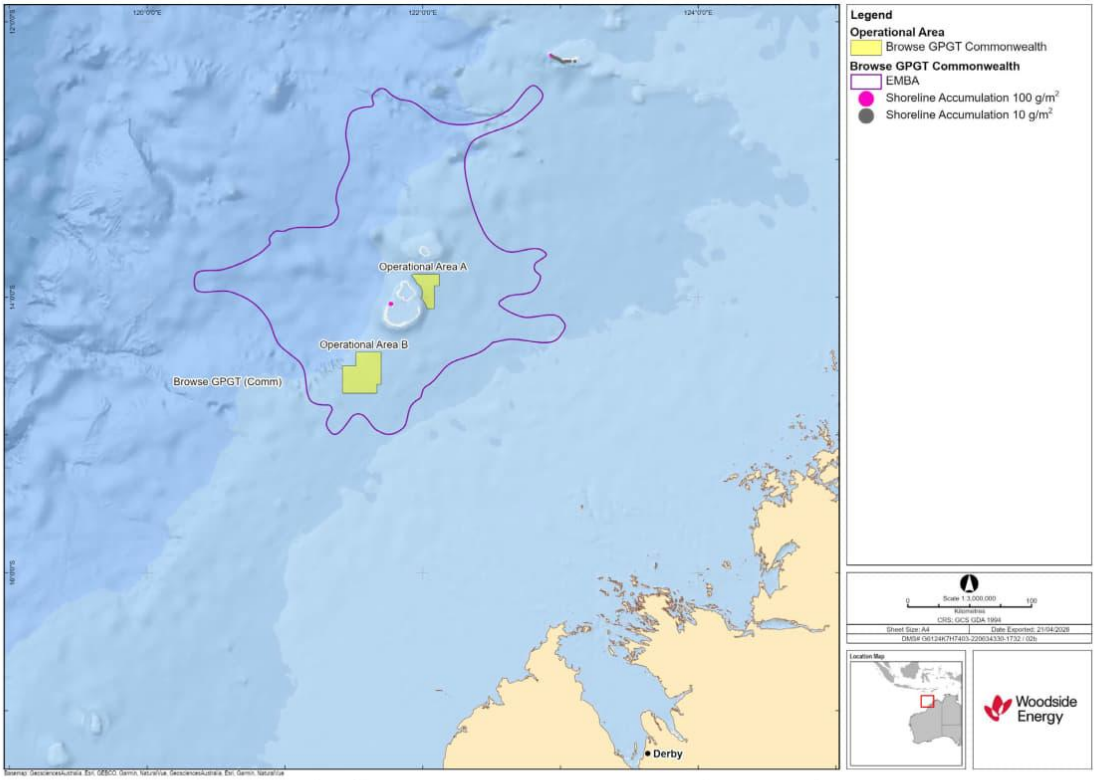


Figure 6. Environment that May Be Affected (EMBA) by the Browse to NWS Project GPGT Surveys EP (Commonwealth).

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Impacts/Risks, and Mitigation and/or Management Measures

Woodside assessed the impacts and risks to the environment arising from the planned activities and unplanned events. This assessment considers the timing, duration and location of the activities. Proposed mitigation and management measures are summarised in Table 3. Further details will be provided in the EP.

In preparing the EP, Woodside's intent is to minimise environmental, social and cultural impacts and risks associated with the proposed activities, and Woodside seeks your feedback to inform our decision-making.

Table 3 – Summary of key impacts and risks and proposed management measures*

Impact/Risk	Description of Source of Impact/Risk	Description of Impact/Risk	Proposed Mitigation and/or Management Measure
Planned activities (routine and non-routine)			
Physical presence: *interaction with other marine users*	• The physical presence and movement of survey vessels and towed equipment within the Operational Area. • The following vessels may be involved in survey activities: - Offshore geophysical and light geotechnical vessel - Geotechnical vessels (geotechnical drilling vessels) - Uncrewed surface vessels (USVs). • Activity may not be executed as a single survey, meaning vessel-based activities may occur at any time during the approval period of the EP.	• Commercial fishing activities/equipment and commercial shipping vessels may be affected by survey vessels and related equipment in the Operational Area. • Other marine users may be present in the Operational Area. These include recreational fishing areas, tourism, and commercial shipping fairways. • Due to the localised nature of the activity, any potential displacement is expected to be negligible with no lasting effect.	• Vessels to adhere to the navigation safety requirements including the *Navigation Act 2012* and any subsequent Marine Orders. • Notify the Australian Hydrographic Office (AHO) prior to commencement of the activity so that marine users are aware of the activity. • Notify relevant government departments, fishing industry representative bodies and licence holders (where requested during consultation) of activities prior to commencement and on completion of activities. • Consult with marine users so they are informed of the proposed activities. • Establish a temporary 500 m safety exclusion zone around the survey vessels which is communicated to marine users.
Physical presence: *disturbance to the seabed from geotechnical surveys*	• Geotechnical survey activities are likely to result in localised and temporary physical impacts to a small area of the seabed within the Operational Area. • The source of impact from geotechnical surveys are: - Piston/gravity cores - Vibrocores - Box cores - Boreholes (PCPT, cored boreholes). • The geotechnical seabed coring may result in the indirect discharge of a small quantity of drill cuttings and fluid at the seafloor.	• Localised impact and is not expected to result in lasting effects/impacts to seabed and associated benthic communities, arising from: - Localised modification of seabed habitat within the Operational Area. - Localised change in habitat, water quality, and sediment quality, which may affect marine fauna. • The Operational Area is expected to consist mainly of sandy substrate. • The Operational Area overlaps the Ancient Coastline Key Ecological Features. • Due to the short duration and localised nature of the activity, any physical impacts to the seabed are expected to be negligible.	• No routine anchoring will occur during surveys. • Comply with regulatory requirements for Underwater Cultural Heritage (UCH). • An Unexpected Finds Procedure will be in place in the event of the discovery of what appears to be UCH. • Relevant vessel crew and ROV operators will be advised in an induction of the potential to encounter UCH, and of their requirement to follow the Unexpected Finds Procedure. • Monitor inventory deployed to the field and track removal of equipment during activity to enable deployed equipment to be retrieved.

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Impact/Risk	Description of Source of Impact/Risk	Description of Impact/Risk	Proposed Mitigation and/or Management Measure
Routine and non-routine acoustic emissions: ***generation of noise from vessels and geophysical and geotechnical survey equipment***	· Generation of underwater noise from: - Vessels through the operation of thrusters, engines, propellers and onboard machinery - Geophysical survey equipment such as sub-bottom profiler, multibeam echo sounder, side-scan sonar and ultra short baseline positioning system, and - Geotechnical survey equipment such as core penetration tests, geotechnical boreholes, box core sampling and piston/push sampling.	· Underwater noise may affect marine fauna, including marine mammals in three main ways: 1. By causing direct physical effects, including injury or hearing impairment. 2. Through disturbance leading to behavioural changes or displacement from important areas. The occurrence and intensity of disturbance is highly variable and depends on a range of factors relating to the animal and situation. 3. By masking or interfering with other biologically important sounds (including vocal communication, echolocation, signals and sounds produced by predators or prey). · Biologically Important Areas (BIAs) overlapping the Operational Area include the pygmy blue whale foraging and migration BIAs, the green turtle and hawksbill turtle nesting/internesting BIAs and the green turtle nesting/internesting habitat critical to the survival of a species. · The noise generated by the vessels, geophysical and geotechnical survey equipment may result in localised and temporary behavioural changes to marine fauna. · Potential behavioural effects are not likely to have a lasting impact on protected species, ecosystems, and functions.	· Comply with *EPBC Regulations 2000 part 8 Division 8.1* and guidance for interactions with marine fauna. · All vessels will not travel at speeds greater than 12 knots within the pygmy blue whale possible foraging area that overlaps Scott Reef during peak migration periods, unless required for SOLAS. · Comply with *Biodiversity Conservation Regulations 2018* for whale sharks. · Limit activities with potential acoustic impacts where possible within the pygmy blue whale possible foraging BIA during certain times of the year when pygmy blue whales are likely to be foraging. · Pre-start visual observations for whales undertaken prior to start-up of vessel DP and noise emitting geophysical survey equipment. Start-up is to be delayed if a whale is sighted within the observation zone.
Routine and non-routine discharges: ***survey vessels utility systems (bilge water, greywater, sewage, putrescible wastes and deck drainage water)***	· Routine discharge of sewage, grey water and putrescible wastes to marine environment from survey vessels. · Routine discharge of deck and bilge water to marine environment from survey vessels.	· The main 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 including short-term, localised impacts to water quality. · No significant impacts are expected to water quality from planned discharges because of the minor quantities involved, the expected localised mixing zone, and the high level of dilution into the open water marine environment of the Operational Area. · Similarly, although some marine fauna may transit the Operational Area, potential for impacts remains low due to the short-term and localised nature of discharges and rapid dilution.	· Vessel discharges will be managed according to regulatory requirements as applicable to vessel class. · Chemicals will be selected with the lowest practicable environmental impacts and risks subject to technical and feasibility constraints and approved through the Woodside chemical assessment process.

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Impact/Risk	Description of Source of Impact/Risk	Description of Impact/Risk	Proposed Mitigation and/or Management Measure
Routine and non-routine discharges: ***drill cuttings and drilling fluids during geotechnical drilling***	· Drill cuttings and fluids will be discharged at the borehole location for geotechnical surveys. · Drilling fluid will consist primarily of seawater and may include low toxicity additives.	· Geotechnical survey activities are likely to result in localised and temporary physical modification and disturbance to a small area of the seabed. Potential impacts include: - localised reduction in water and sediment quality - Localised loss or damage to benthic habitats. · The Operational Area overlaps with the Continental Slope Demersal Fish Communities Key Ecological Features and the Seringapatam Reef and Commonwealth waters in the Scott Reef Complex Key Ecological Features. Impacts to benthic marine fauna as a result of geotechnical surveying are expected to be highly localised to surface area of the borehole, drill cuttings and the footprint of the geotechnical equipment, which is a relatively small area compared to the regional extent of the Key Ecological Features.	· Chemicals will be selected with the lowest practicable environmental impacts and risks subject to technical constraints and approved through the Woodside chemical assessment process.
Routine light emissions: ***external lighting on survey vessels***	· 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.	· Light emissions may affect fauna (such as marine turtles and birds) in two main ways: 1. Behaviour: artificial lighting has the potential to create a constant level of light at night that can override natural levels and cycles. 2. Orientation: if an artificial light source is brighter than a natural source, the artificial light may override natural cues, leading to disorientation. · Potential to temporarily affect fauna such as fish, marine reptiles and seabirds by influencing changes in their behaviour or impacting orientation in close proximity to vessels. · Biologically Important Areas (BIAs) overlapping the Operational Areas include the little tern resting BIA.	· Implementation of the Woodside Offshore Seabird Management Plan. · Lighting will be limited to the minimum required for navigation and safe operational requirements, with the exception of emergency events.
Routine and non-routine: ***atmospheric and greenhouse gas (GHG) emissions***	· Atmospheric emissions and GHG emissions associated with survey vessels. · Emissions are generated from internal combustion engines, machinery, and incinerators on vessels.	· Emissions associated with survey vessels could result in temporary, localised reductions in air quality in the immediate vicinity. · The exposed location of the survey vessels is expected to result in the rapid dispersion of the low volumes of atmospheric emissions, as such the potential impacts are expected to be localised and are not expected to result in lasting effects/impacts.	· Comply with regulatory requirements for GHG emissions reporting. · Vessel operations planned, where practicable, to minimise fuel consumption and associated GHG/air emissions. · Fuel types will be selected to reduce expected GHG emissions (i.e., survey vessels will not likely use heavy fuel oil (HFO) or intermediate fuel oil (IFO)).

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Impact/Risk	Description of Source of Impact/Risk	Description of Impact/Risk	Proposed Mitigation and/or Management Measure
Unplanned events (accidents/incidents)			
Accidental introduction of invasive marine species (IMS)	· Survey vessels have the potential to introduce IMS to the Operational Area through marine biofouling (containing IMS), 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 survey vessels) or onto seabed habitat within shallower areas.	· The likelihood of IMS being introduced and establishing viable populations within the Operational Area or immediate surrounds is considered remote. · Given the low likelihood of IMS translocation to and colonisation within the Operational Area, survey activities are unlikely to result in establishment of IMS, and as such will not adversely affect other marine user activities in the region.	· Vessels will manage their ballast water using one of the approved ballast water management options, as outlined in the Australian Ballast Water Management Requirements as applicable to vessel class. · Woodside's IMS risk assessment process will be applied to vessels and immersible equipment undertaking the activities.
Unplanned interaction with marine fauna	· Accidental collision between vessels and marine fauna. · Survey vessels would typically be stationary or moving at low speeds when supporting the survey activities.	· Vessel movements have the potential to result in accidental collisions between the vessel (hull and propellers) and marine fauna. · Given the short duration of activities within the Operational Area, and the slow speeds at which the vessels typically operate, collisions with cetaceans are considered unlikely. · Biologically Important Areas (BIAs) overlapping the Operational Areas include the pygmy blue whale foraging and migration BIAs.	· Comply with *EPBC Regulations 2000 part 8 Division 8.1* and guidance for interactions with marine fauna. · Vessels will not travel at speeds greater than 12 knots within the pygmy blue whale possible foraging area that overlaps Scott Reef during peak migration periods, unless required for SOLAS.
Physical presence: *disturbance to seabed from dropped objects, equipment loss*	· Dropped objects resulting in the disturbance of seabed habitat.	· Unplanned seabed disturbance may result in localised changes to water and sediment quality or a localised temporary impact to benthic communities and is therefore considered to present a negligible risk. · Potential impacts to Key Ecological Features which intersect the Operational Area are considered to have a temporary disruption and no lasting effects to a small area of the seabed, as they would be limited to the footprint of a dropped object resulting in potential highly localised and temporary change in habitat. Dropped objects within the Operational Area could impact cultural heritage associated with this area, however, this would also comprise a small area.	· Survey vessel inductions include control measures for dropped object prevention. · Dropped objects and geophysical/geotechnical equipment to be recovered where safe and practicable to do so. · Apply safe work procedures to prevent dropped objects from vessels and during deployment and retrieval of equipment.

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Impact/Risk	Description of Source of Impact/Risk	Description of Impact/Risk	Proposed Mitigation and/or Management Measure
Unplanned discharges: ***loss of solid hazardous and nonhazardous wastes/ equipment***	· Accidental discharge of hydrocarbons/ chemicals from survey vessels deck activities and equipment, from subsea ROV hydraulic leaks. · Unplanned release of chemicals or hydraulic fluid due to failure of subsea equipment. · Accidental loss of hazardous or nonhazardous solid wastes/ equipment to the marine environment.	· Potential for contamination of the environment as well as secondary impacts relating to potential contact of marine fauna with wastes. · The temporary or permanent loss of waste materials/equipment into the marine environment is not likely to have a significant environmental impact, based on the location of the activity, the types, size and frequency of wastes that could occur, and species present.	· Comply with regulatory requirements for the prevention of marine pollution and handling of hazardous wastes (i.e., Marine Orders 95 and 94). · Implement a Vessel Waste Management Plan. · Solid waste/equipment dropped to the marine environment is to be recovered where safe and practicable to do so.
Unplanned discharges: ***deck and subsea spills from geotechnical and geophysical survey vessels and equipment***	· Accidental discharge to the ocean of other hydrocarbons/chemicals/ geotechnical drilling fluids from survey vessels deck activities and equipment (e.g., cranes). · Unplanned release of chemicals or hydraulic fluid due to failure of geotechnical and geophysical survey equipment.	· Unplanned discharges of non-process chemicals and hydrocarbons may decrease the water quality in the immediate vicinity of the release. Only small volumes are anticipated, resulting in very short-term impacts to water quality, limited to the immediate release location. · As a result of a change in water quality, further impacts to receptors may occur, however impacts to marine fauna are expected to be limited to temporary irritation of sensitive membranes to individuals and are considered slight or less (negligible).	· Comply with regulatory requirements for the prevention of marine pollution for vessels as applicable to vessel class. · Liquid chemical and fuel storage areas are bunded or secondarily contained when they are not being handled/moved temporarily on survey vessels. · Spill kits positioned in high-risk locations around the vessels (near potential spill points such as transfer stations). · Chemicals will be selected with the lowest practicable environmental impacts and risks subject to technical constraints and approved through the Woodside chemical assessment process.
Unplanned hydrocarbon release: ***vessel collision***	· Loss of hydrocarbons to marine environment due to vessel collision (e.g., other vessels or marine users). · For a collision to result in the worst-case scenario diesel release, several factors must occur as follows: 1. Vessel interaction must result in a collision. 2. The collision has enough force to penetrate the vessel hull and in the exact location of the fuel tanks, and 3. The fuel tank must be full or at least filled with a volume of fuel which is higher than the point of penetration.	· In the highly unlikely event of a vessel collision causing a release of marine diesel, impacts to water quality and marine ecosystems could occur. · Modelling of a surface release of marine diesel was used to understand potential impacts. In the event of a hydrocarbon release, potential impacts across the EMBA will be assessed including receptors such as plankton, fish, marine turtles, marine mammals, seabirds and migratory shorebirds, marine primary producers, tourism, recreation, commercial fisheries, commercial shipping and cultural heritage. · Marine diesel is a relatively volatile, non-persistent hydrocarbon with up to 40% evaporating within the first 24 hours. · Potential to result in reduction to water quality. · Potential disruption to marine fauna, including protected species. · Potential interference with or displacement of other marine users including fisheries, tourism and recreation.	**Preventing marine vessel collisions:** · Comply with regulatory requirements for navigational safety and prevention of vessel collisions as applicable to vessel class. · Notify the Australian Hydrographic Office (AHO) prior to commencement of the activity so that marine users are aware of the activity. · Notify relevant government departments, fishing industry representative bodies and licence holders (where requested during consultation) of activities prior to commencement and on completion of activities. · Establish a temporary 500 m safety exclusion zone around the survey vessels which is communicated to marine users. · A management plan for simultaneous operations is in place when working in vicinity of other Woodside operations/activities. **Spill response arrangements:** · In the event of a spill, emergency response activities would be implemented in accordance with the Oil Pollution Emergency Plan (OPEP). · Arrangements supporting the activities in the OPEP will be tested so that the OPEP can be implemented as planned.

** These mitigation and management measures are subject to change through the consultation and subsequent assessment process and may not represent content in the publicly available EP or in the final plan once accepted.*

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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'.

If you would like to comment on the proposed activities outlined in this information sheet, please provide feedback to Woodside by **28 May 2026** via:

feedback@woodside.com
Toll free: 1800 442 977

You can subscribe on our website to receive Consultation Information Sheets for proposed activities:
woodside.com/what-we-do/consultation-activities

Please note that stakeholder feedback will be communicated to NOPSEMA as required under legislation. Woodside will communicate any material changes to the proposed activity to affected relevant persons as relevant and appropriate.

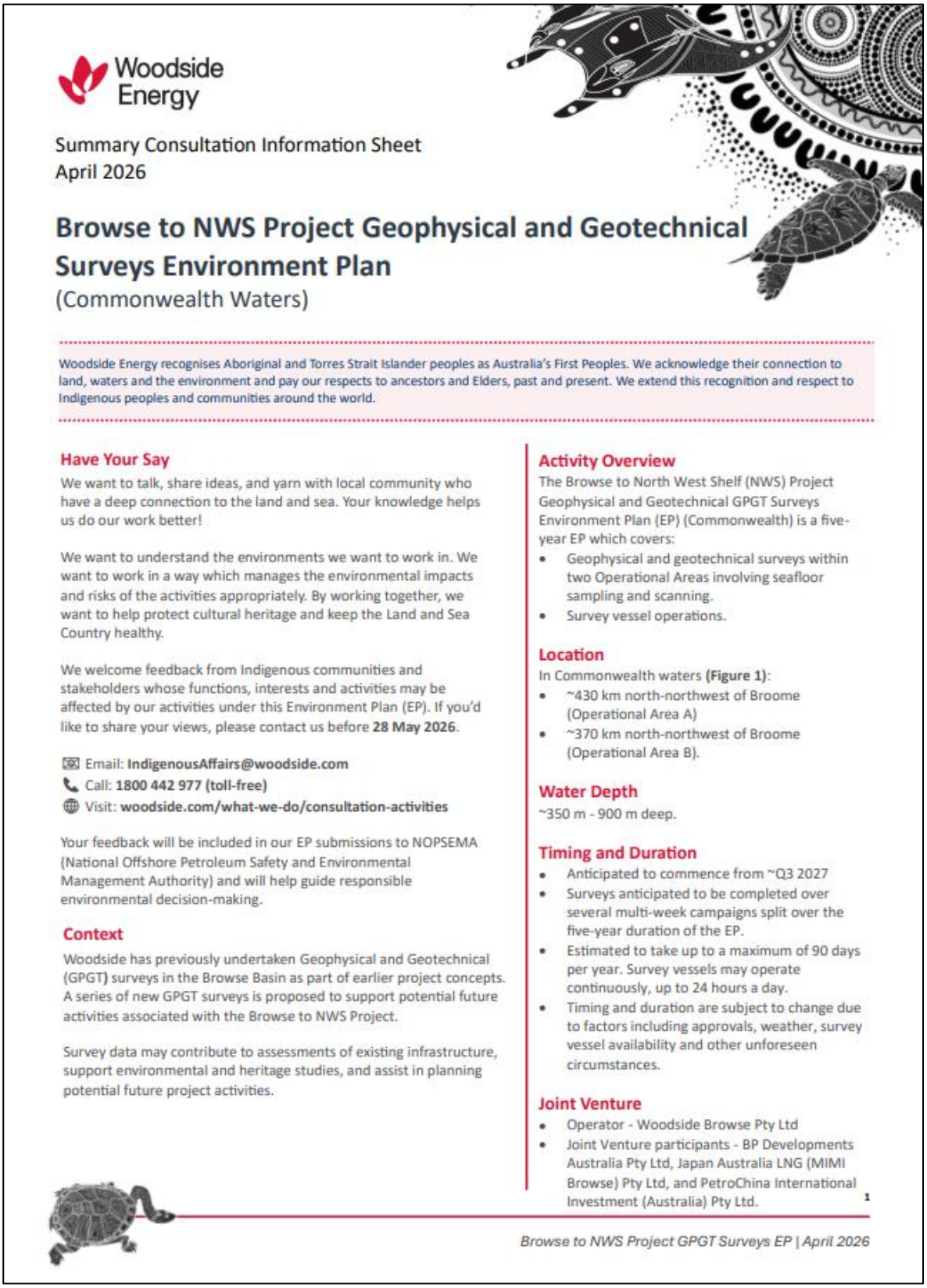
Your feedback and our response will be included in our Environment Plan for the proposed activity, which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023* (Cth) and support other regulatory processes associated with the planned activities (which may or may not be confidential).

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:
woodside.com/what-we-do/consultation-activities



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6.1.2 Summary Information Sheet and Underwater Cultural Heritage Study Information Sheet



Woodside Energy

Summary Consultation Information Sheet
April 2026

Browse to NWS Project Geophysical and Geotechnical Surveys Environment Plan
(Commonwealth Waters)

Woodside Energy recognises Aboriginal and Torres Strait Islander peoples as Australia's First Peoples. We acknowledge their connection to land, waters and the environment and pay our respects to ancestors and Elders, past and present. We extend this recognition and respect to Indigenous peoples and communities around the world.

Have Your Say

We want to talk, share ideas, and yarn with local community who have a deep connection to the land and sea. Your knowledge helps us do our work better!

We want to understand the environments we want to work in. We want to work in a way which manages the environmental impacts and risks of the activities appropriately. By working together, we want to help protect cultural heritage and keep the Land and Sea Country healthy.

We welcome feedback from Indigenous communities and stakeholders whose functions, interests and activities may be affected by our activities under this Environment Plan (EP). If you'd like to share your views, please contact us before **28 May 2026**.

Email: **IndigenousAffairs@woodside.com**
Call: **1800 442 977 (toll-free)**
Visit: **woodside.com/what-we-do/consultation-activities**

Your feedback will be included in our EP submissions to NOPSEMA (National Offshore Petroleum Safety and Environmental Management Authority) and will help guide responsible environmental decision-making.

Context

Woodside has previously undertaken Geophysical and Geotechnical (GPGT) surveys in the Browse Basin as part of earlier project concepts. A series of new GPGT surveys is proposed to support potential future activities associated with the Browse to NWS Project.

Survey data may contribute to assessments of existing infrastructure, support environmental and heritage studies, and assist in planning potential future project activities.

Activity Overview

The Browse to North West Shelf (NWS) Project Geophysical and Geotechnical GPGT Surveys Environment Plan (EP) (Commonwealth) is a five-year EP which covers:

- Geophysical and geotechnical surveys within two Operational Areas involving seafloor sampling and scanning.
- Survey vessel operations.

Location

In Commonwealth waters **(Figure 1)**:

- ~430 km north-northwest of Broome (Operational Area A)
- ~370 km north-northwest of Broome (Operational Area B).

Water Depth

~350 m - 900 m deep.

Timing and Duration

- Anticipated to commence from ~Q3 2027
- Surveys anticipated to be completed over several multi-week campaigns split over the five-year duration of the EP.
- Estimated to take up to a maximum of 90 days per year. Survey vessels may operate continuously, up to 24 hours a day.
- Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.

Joint Venture

- Operator - Woodside Browse Pty Ltd
- Joint Venture participants - BP Developments Australia Pty Ltd, Japan Australia LNG (MIMI Browse) Pty Ltd, and PetroChina International Investment (Australia) Pty Ltd.

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Browse to NWS Project GPGT Surveys EP | April 2026

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Activity Location

The EP explains how Woodside will manage environmental risks and impacts while carrying out our activities. These plans help us conduct operations safely and responsibly, with respect for the environment and cultural heritage. The location where the work will be done is known as the Operational Area (**Figure 1**).

Woodside must consult with relevant persons, including Traditional Custodian groups whose functions, interests or activities may be affected by the activities to be carried out under the EP or that are considered relevant, to listen to concerns and, where required, incorporate feedback into the EP.

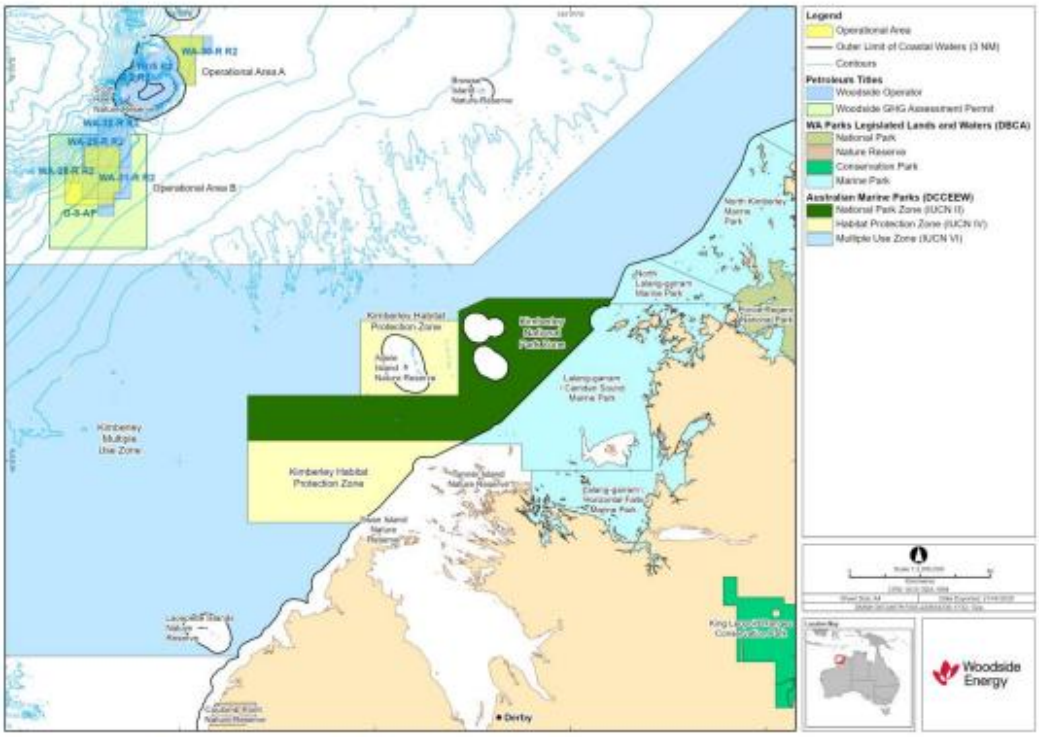


Figure 1: Location of the activity, including Operational Area and associated infrastructure

Planned Activities and Unplanned Events

We assess both planned activities and unplanned events which may result in environmental risks and impacts.

Planned activities are activities that Woodside knows will happen as part of the work under the EP. This could include generating underwater noise, light emissions, associated atmospheric emissions or routine discharges (such as sewage, waste, and deck drainage). We take steps so that planned activities comply with legislative and regulatory requirements.

Unplanned events are very unlikely. They may be the result of an accident, incident or emergency, such as a spill of fuel or oil from a ship (vessel) collision, a spill on the deck of a vessel (like during refuelling), unplanned seabed and/or marine life disturbance, or accidental introduction of invasive species from outside the region.

Planned and unplanned activities, potential impacts, and management measures are included in the Consultation Information Sheet for this activity, available at www.woodside.com/what-we-do/consultation-activities.

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Environment that May Be Affected (EMBA)

The EMBA map (**Figure 2**) is a model of the largest spatial area where the activity could have a potential environmental impact. It combines multiple modelling outputs for both planned and unplanned activities in the highly unlikely event of an oil and natural gas (hydrocarbon) release to the environment. The modelling scenarios that inform the EMBA is vessel collision.

The EMBA does not show the predicted impact of a single event - it is the merged area of many possible scenarios that a highly unlikely hydrocarbon release could travel, depending on the weather and ocean conditions at the time. This means that if a hydrocarbon release was to occur, the whole EMBA would not be affected. The specific and minimal part of the EMBA that is affected will only be known at the time of a release.

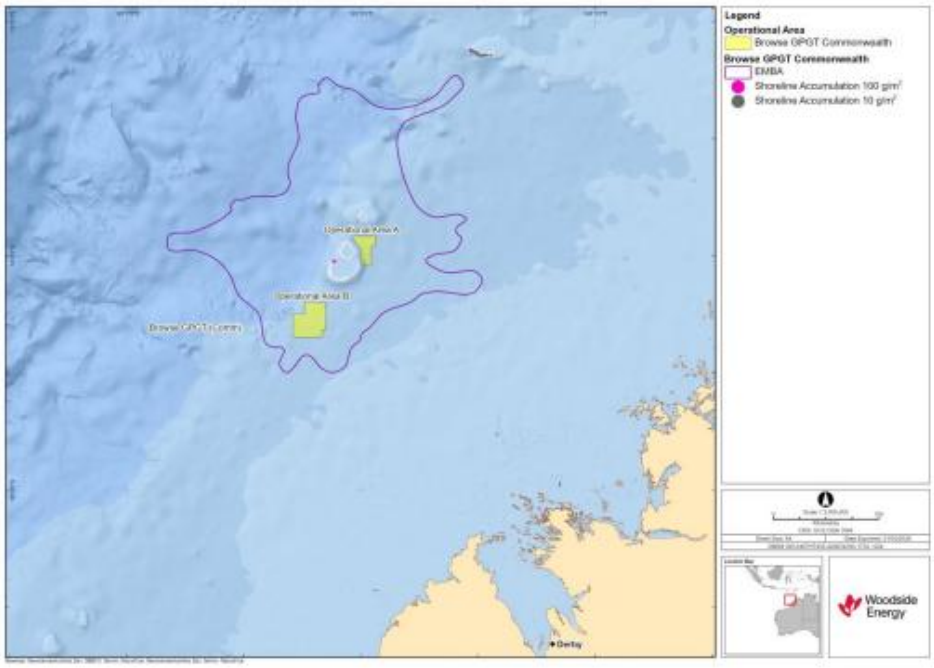


Figure 2: Environment that May Be Affected (EMBA) map

Your Feedback is Important

Woodside consults with relevant persons during the preparation of EPs to notify them about the activity and hear their feedback. By working together, we aim to protect biodiversity and maintain the health of ecosystems while carrying out our projects.

Your feedback helps shape the EP by:

- Identifying additional possible measures to reduce environmental impacts.
- Helping us consider cultural heritage and environmental values.
- Providing information that may help improve Woodside's environmental practices.

If there is particular information that you provide during consultation that you'd prefer not to be published, please let us know. We'll make your request known to NOPSEMA.

We'll manage any personal information collected during our consultation with you in accordance with Woodside's Environment Plan Privacy Collection Notice. To understand more, please visit www.woodside.com/what-we-do/consultation-activities.

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Woodside Energy

Information Sheet

Underwater Cultural Heritage Study Browse to North West Shelf (NWS) Project

Woodside Energy recognises Aboriginal and Torres Strait Islander peoples as Australia's First Peoples. We acknowledge their connection to land, waters and the environment and pay our respects to ancestors and Elders, past and present. We extend this recognition and respect to Indigenous Peoples and communities around the world.

Woodside commissioned an Underwater Cultural Heritage desktop study in 2025 which covered the proposed activity area of the Browse to NWS Project (proposed activity area). This study builds on Woodside's knowledge about the submerged cultural landscape and helps inform project planning so we can put in place relevant measures to manage our impact and mitigate potential risks to the seabed in the proposed activity area.

We'd like to hear from Traditional Owners and Custodians about their cultural values, stories and traditional knowledge of this proposed activity area to build on what we've found.

The Browse to NWS Project

Woodside and its Joint Venture participants are proposing to develop the Calliance, Brecknock and Torosa natural gas fields which are located in the offshore Browse Basin, about 425 kms north of Broome, WA. The proposal includes development within the Browse Basin, as well as approximately 900 km of new trunkline which would be laid on the seabed in the proposed activity area.

Why did we do a study?

Woodside commissioned the study as part of planning for the proposed project to help us understand any heritage features around the proposed activity area. We wanted to identify areas that may contain underwater cultural heritage. During the last Ice Age (between 30,000 and 15,000 years ago), sea levels in the NWS region would have been approximately 125 m lower than present. This means the coastline would have extended further than it does today and Indigenous people may have occupied this area.

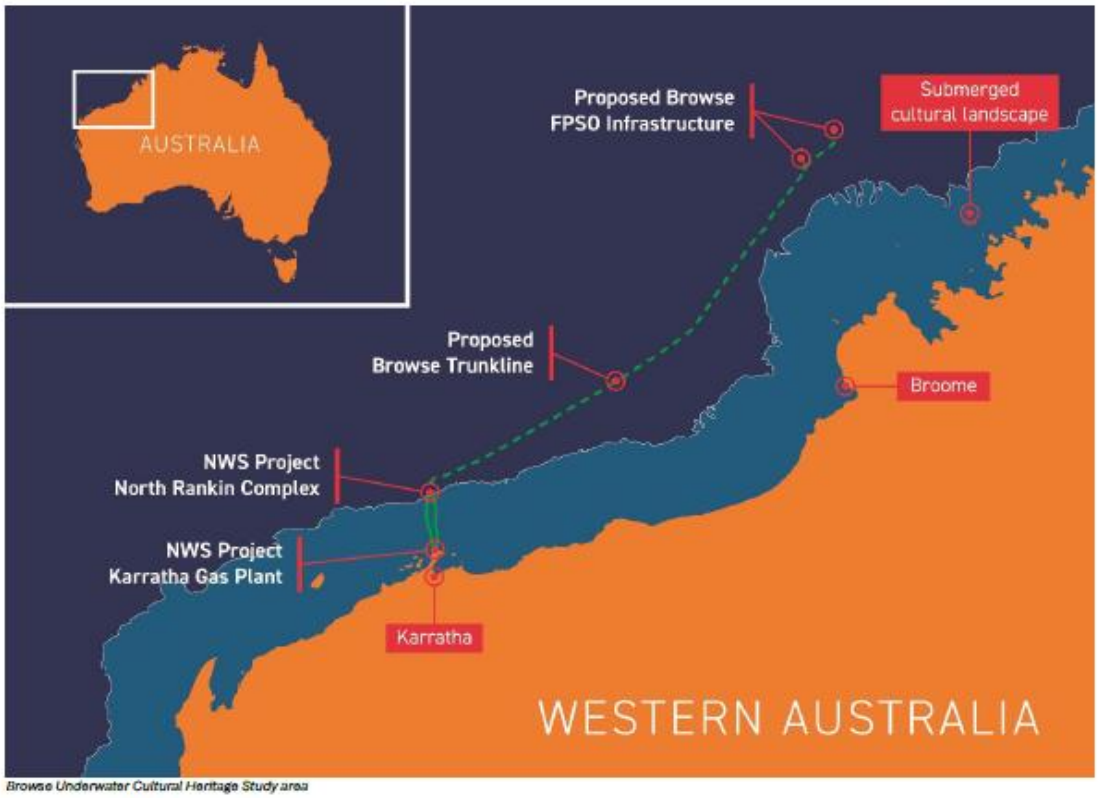


How was the study done?

Over the years of planning for the proposed Browse to NWS Project, Woodside has collected information about the seabed through various survey methods.

Woodside engaged independent, specialist archaeologists to review this data, as well as publicly available information along the proposed trunkline route in the proposed activity area. The archaeologists compiled their findings into a report.

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Browse Underwater Cultural Heritage Study area

Where did we study?

The study focussed on the path of the proposed Browse trunkline (the dotted green line in the above map) and activity areas.

What did the study find?

The study confirmed:

- Most of the proposed activity area would have been underwater when people moved into what is now northern Australia.
- A section of the southern end of the proposed trunkline is in shallower water. This part of the seabed was dry land approximately 40,000 years ago and may have been inhabited.
- There was no evidence of Indigenous cultural material in the study area.
- There was no evidence of other underwater cultural heritage within the study area (for example shipwrecks).

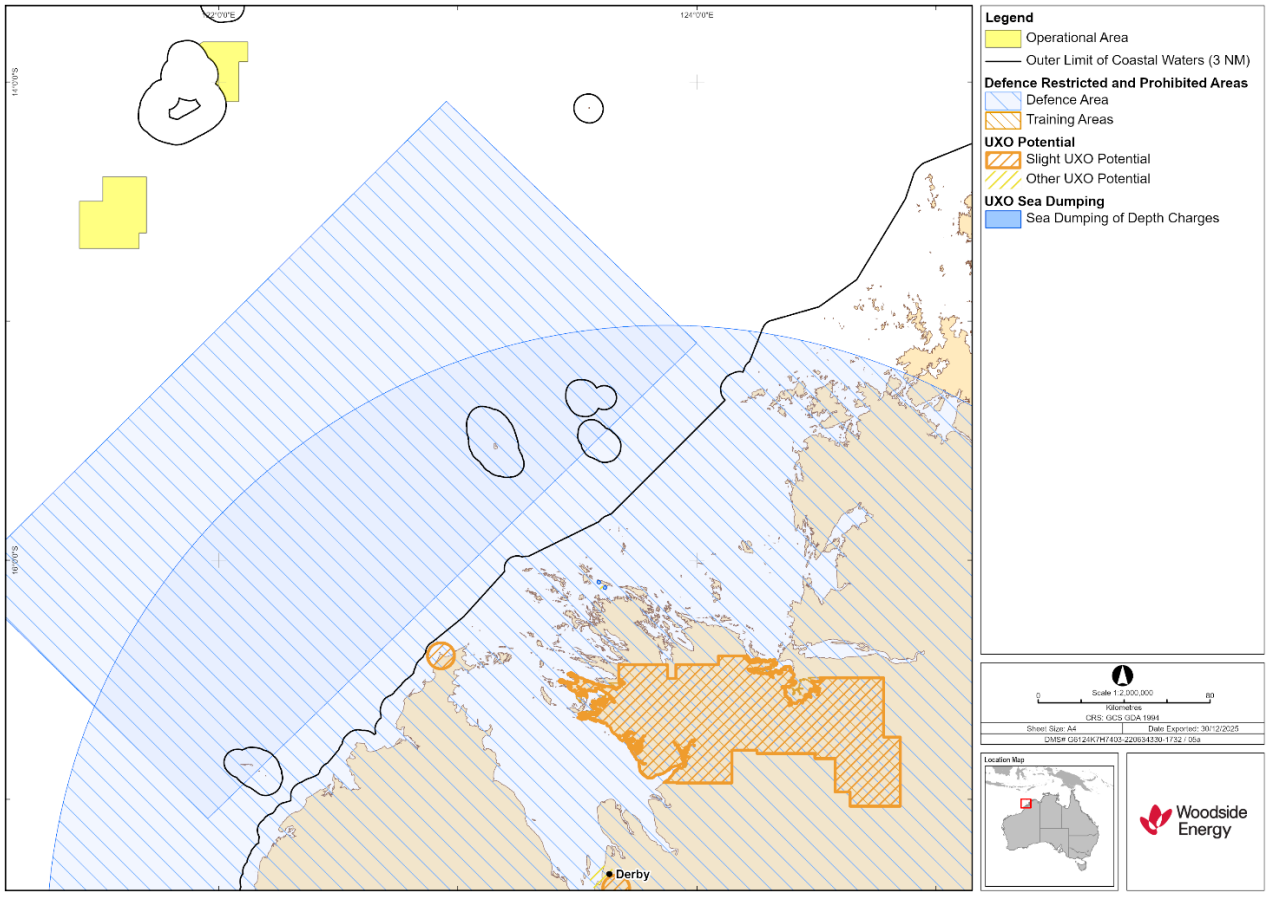
We'd like your feedback

We'd like to build on the results of this study by hearing about your cultural values, stories and traditional knowledge of the study area. We'd also like the opportunity to present our findings to you.

To provide feedback and learn more about the study please contact us at IndigenousAffairs@woodside.com.

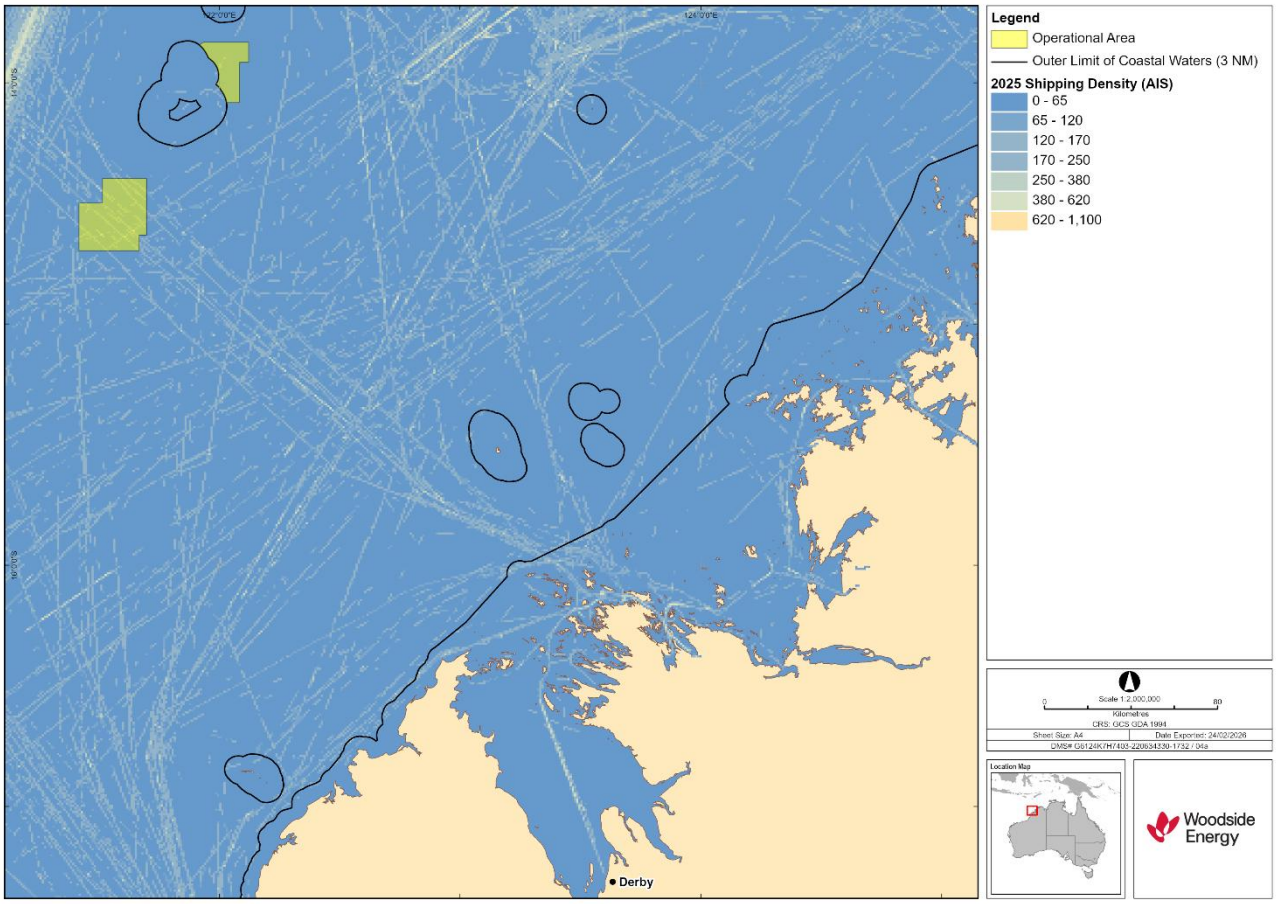
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6.1.3 Defence zones map



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6.1.4 Vessel density map



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6.1.5 Shipwreck data

Browse to NWS Project Geophysical and Geotechnical Surveys Environment Plan (Commonwealth)
EMBA and accumulated shoreline – Australia National shipwrecks overlap - Commonwealth shipwreck data set

Vessel Name	Vessel Type	When Lost	Where Lost	Latitude	Longitude
Onogra	Unknown	1987		-14	121.76805
Yarra	Sailing vessel	1884	Scott Reef	-14.040493	121.770013

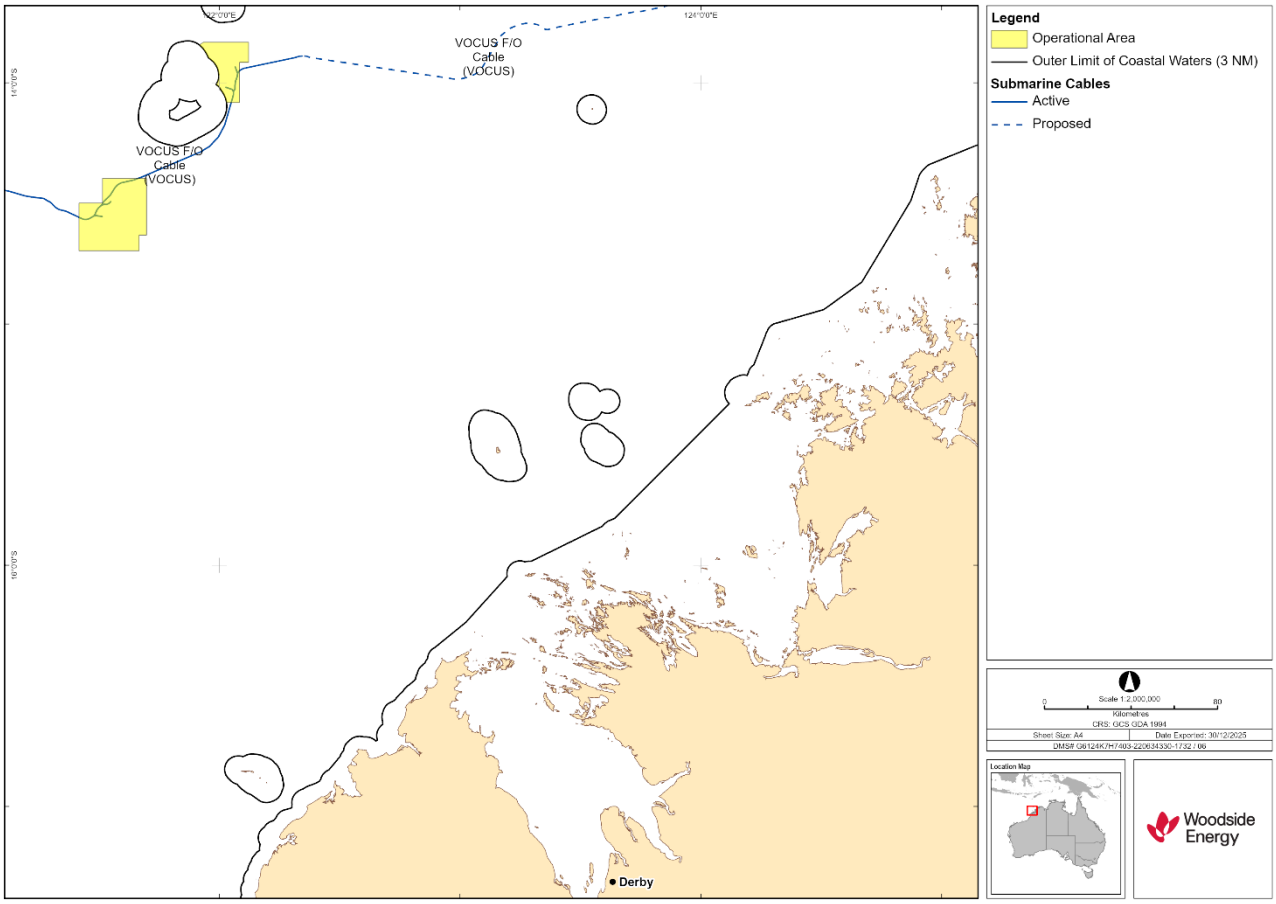
Browse to NWS Project Geophysical and Geotechnical Surveys Environment Plan (Commonwealth)
EMBA and accumulated shoreline – Western Australia State shipwrecks overlap – State shipwreck data set

Vessel Name	Vessel Type	When Lost	Where Lost	Latitude	Longitude
Onogra		1987		14°00.0	121°46.083
Yarra	Barque	1884/01/15	Scott Reef	14°02.42958	121°46.20078

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6.1.6 Submarine communication cables map



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6.1.7 Email sent to Australian Border Force (ABF); Australian Conservation Foundation (ACF); Australian Energy Producers (AEP); Australian Marine Conservation Society (AMCS); Australian Maritime Safety Authority (AMSA)– Marine Pollution; Beach Energy; Broome Chamber of Commerce and Industry (BCCI); Conservation Council of WA (CCWA); Department of Industry, Science and Resources (DISR); Department of Mines Petroleum and Exploration (DMPE); Department of Transport and Major Infrastructure (DTMI); Department of Water and Environmental Regulation (DWER); Environs Kimberley; Greenpeace Australia Pacific (GPAP); Marine Tourism WA; Origin Energy; PetroChina International Investment (Australia); Recfishwest; Santos; Shire of Broome; WA Game Fishing Association – 28 April 2026

Woodside is planning to submit the Browse to North West Shelf (NWS) Project Geophysical and Geotechnical (GPGT) Surveys Commonwealth and State Environment Plans (EP).

The Operational Area for the **Browse to NWS Project GPGT Surveys (Commonwealth) EP** covers several petroleum titles in Commonwealth waters: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R, and G-8-AP. It includes:

- Operational Area A – the Torosa field, located approximately 430 km north-northwest of Broome
- Operational Area B – the Calliance and Brecknock fields, located approximately 370 km north-northwest of Broome.

The Operational Area for the **Browse to NWS Project GPGT Surveys (State) EP** overlaps Petroleum Titles TR/5 R2, located in State waters approximately 430 km north-northwest of Broome.

If you would like to comment on the proposed activities, please provide feedback to Woodside by **28 May 2026** using the details below.

Overview

Woodside has previously undertaken GPGT surveys in the Browse Basin as part of earlier project concepts.

A series of new GPGT surveys is proposed to support potential future activities associated with the Browse to NWS Project. These surveys will be conducted across both Commonwealth and State waters and are organised into three Environment Plans (EPs):

- Browse to NWS Project GPGT Surveys EP (Commonwealth) – the subject of this consultation
- Browse to NWS Project GPGT Surveys EP (State) – the subject of this consultation
- Browse to NWS Project Trunkline GPGT Surveys EP (Commonwealth).

Survey data is intended to inform the design and installation of the proposed trunkline, pipelines and umbilicals, subsea structures, and the mooring systems for the two proposed floating production storage and offtake (FPSO) facilities and mobile offshore drilling units (MODUs).

Data may also contribute to assessments of existing infrastructure, support environmental and heritage studies, and assist in planning potential future project activities.

You can read more about the Browse Project on our website.

Consultation information

Consultation Information Sheets are attached, which provide additional background on our approach to consultation, and on the proposed activities including summaries of potential key impacts and risks and associated management measures. These are also available on our website.

Activity and location summary

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Browse to NWS Project GPGT Surveys Environment Plan (EP)		
	Commonwealth EP	**State EP**
Activity details	**Geophysical surveys within the Operational Area using:** • Multibeam echosounder (MBES), single beam echo sounder, altimeter • Side scan sonar (SSS) including variants such as multi-aperture and synthetic aperture sonar • Magnetometer / gradiometer and pipe tracker • Sub-bottom profiler (SBP), such as but not limited to boomer, sparker, pinger, chirp, and parametric SBP. **Geotechnical surveys within the Operational Area using:** • Box corer / grab sampler • Shallow cores and probes: piston core / gravity core / vibrocore • Borehole sampling / coring / in situ testing • Cone penetrometer testing (CPT/PCPT/CPTu). **Other survey equipment being used:** • Water sampler • Sound velocity sensor / multi-parameter conductivity-temperature-depth profiler • Ultra-short baseline (USBL) positioning system • Doppler velocity log and Inertial navigation system • Underwater camera • Underwater laser scanner • Remotely operated vehicle (ROV) • Autonomous underwater vehicle (AUV).	
Titles	• Petroleum licences: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R. • Greenhouse Gas permit G-8-AP.	• Petroleum licence: TR/5 R2.
Location	In Commonwealth waters ~ 430 km north-northwest of Broome (Operational Area A) and ~ 370 km north-northwest of Broome (Operational Area B).	In State waters ~ 430 km north-northwest of Broome.
Water depth	~ 350 m - 900 m	~ 75 m - 700 m
Timing	Anticipated to commence from ~ Q3 2027.	
Duration	• Surveys anticipated to be completed over several multi-week	• Surveys anticipated to be completed over several multi-

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	campaigns (typically 20-60 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 90 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.	week campaigns (typically 20-40 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 40 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.
Vessels	Multi-purpose vessels, uncrewed surface vessels, geotechnical drilling vessels and support vessels.	
Operational Area and exclusion zones	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Areas may vary. • Operational Areas are within Commonwealth waters.	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within State waters.
Communication with mariners	• Commercial fishers and other marine users are permitted to use the Operational Area but should take care around operations by adhering to standard navigation rules and remain clear of the safety exclusion zone. • Marine notices will be issued prior to activity commencement to alert vessels which may be operating in waters nearby.	

Environment that May Be Affected (EMBA)

The EMBA is the largest geographic area where an unplanned event could potentially have an environmental consequence. The broadest extent of the EMBA takes into consideration planned activities and unplanned events. The EMBA has been developed combining numerous modelling outputs based on highly unlikely releases of hydrocarbons to the environment. The modelling scenarios that inform the EMBA are for a vessel collision.

The EMBA does not represent the extent of the predicted impact of a highly unlikely hydrocarbon release. Rather, the EMBA represents the merged area of many possible paths that a highly unlikely hydrocarbon release could travel, which depends on the weather and ocean conditions at the time of a release. This means that in the highly unlikely event that a hydrocarbon release does occur, the whole EMBA would not be affected. The specific and minimal part of the EMBA that is affected will only be known if there is a release.

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Feedback

If you have feedback specific to the proposed activities, we welcome your feedback via email at feedback@woodside.com, via phone call at 1800 442 977 or via the feedback form on our website by **28 May 2026**. Alternatively, Woodside is willing to consider and accept your feedback via a means which suits you.

Your feedback and our response will be included in our EPs. The Commonwealth EP 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). The State EP will be submitted to the Department of Mines, Petroleum and Exploration (DMPE) for acceptance in accordance with the *Petroleum (Submerged Lands) (Environment) Regulations 2012* (WA). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

You may request that particular information you provide during consultation not be published in the EP made available on the NOPSEMA website. Please let us know if you request that particular information not be published, and we will make your request known to NOPSEMA.

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 Feedback

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6.1.8 Email sent to Department of Defence – 28 April 2026

Woodside is planning to submit the Browse to North West Shelf (NWS) Project Geophysical and Geotechnical (GPGT) Surveys Commonwealth and State Environment Plans (EP).

The Operational Area for the **Browse to NWS Project GPGT Surveys (Commonwealth) EP** covers several petroleum titles in Commonwealth waters: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R, and G-8-AP. It includes:

- Operational Area A – the Torosa field, located approximately 430 km north-northwest of Broome.
- Operational Area B – the Calliance and Brecknock fields, located approximately 370 km north-northwest of Broome.

The Operational Area for the **Browse to NWS Project GPGT Surveys (State) EP** overlaps Petroleum Titles TR/5 R2, located in State waters approximately 430 km north-northwest of Broome.

If you would like to comment on the proposed activities, please provide feedback to Woodside by **28 May 2026** using the details below.

Overview

Woodside has previously undertaken GPGT surveys in the Browse Basin as part of earlier project concepts.

A series of new GPGT surveys is proposed to support potential future activities associated with the Browse to NWS Project. These surveys will be conducted across both Commonwealth and State waters and are organised into three Environment Plans (EPs):

- Browse to NWS Project GPGT Surveys EP (Commonwealth) – the subject of this consultation
- Browse to NWS Project GPGT Surveys EP (State) – the subject of this consultation
- Browse to NWS Project Trunkline GPGT Surveys EP (Commonwealth).

Survey data is intended to inform the design and installation of the proposed trunkline, pipelines and umbilicals, subsea structures, and the mooring systems for the two proposed floating production storage and offtake (FPSO) facilities and mobile offshore drilling units (MODUs).

Data may also contribute to assessments of existing infrastructure, support environmental and heritage studies, and assist in planning potential future project activities.

You can read more about the Browse Project on our website.

Consultation information

Consultation Information Sheets are attached, which provide additional background on our approach to consultation, and on the proposed activities including summaries of potential key impacts and risks and associated management measures. These are also available on our website.

Please also find attached a defence area map in the areas surrounding the Operational Area.

Activity and location summary

Browse to NWS Project GPGT Surveys Environment Plan (EP)		
	Commonwealth EP	**State EP**

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Activity details	**Geophysical surveys within the Operational Area using:** • Multibeam echosounder (MBES), single beam echo sounder, altimeter • Side scan sonar (SSS) including variants such as multi-aperture and synthetic aperture sonar • Magnetometer / gradiometer and pipe tracker • Sub-bottom profiler (SBP), such as but not limited to boomer, sparker, pinger, chirp, and parametric SBP. **Geotechnical surveys within the Operational Area using:** • Box corer / grab sampler • Shallow cores and probes: piston core / gravity core / vibrocore • Borehole sampling / coring / in situ testing • Cone penetrometer testing (CPT/PCPT/CPTu). **Other survey equipment being used:** • Water sampler • Sound velocity sensor / multi-parameter conductivity-temperature-depth profiler • Ultra-short baseline (USBL) positioning system • Doppler velocity log and Inertial navigation system • Underwater camera • Underwater laser scanner • Remotely operated vehicle (ROV) • Autonomous underwater vehicle (AUV).	
Titles	• Petroleum licences: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R. • Greenhouse Gas permit G-8-AP.	• Petroleum licence: TR/5 R2.
Location	In Commonwealth waters ~ 430 km north-northwest of Broome (Operational Area A) and ~ 370 km north-northwest of Broome (Operational Area B).	In State waters ~ 430 km north-northwest of Broome.
Water depth	~ 350 m - 900 m	~ 75 m - 700 m
Timing	Anticipated to commence from ~ Q3 2027.	

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Duration	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-60 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 90 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-40 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 40 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.
Vessels	Multi-purpose vessels, uncrewed surface vessels, geotechnical drilling vessels and support vessels.	
Operational Area and exclusion zones	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within Commonwealth waters.	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within State waters.
Communication with mariners	• Commercial fishers and other marine users are permitted to use the Operational Area but should take care around operations by adhering to standard navigation rules and remain clear of the safety exclusion zone. • Marine notices will be issued prior to activity commencement to alert vessels which may be operating in waters nearby.	

Environment that May Be Affected (EMBA)

The EMBA is the largest geographic area where an unplanned event could potentially have an environmental consequence. The broadest extent of the EMBA takes into consideration planned activities and unplanned events. The EMBA has been developed combining numerous modelling outputs based on highly unlikely releases of hydrocarbons to the environment. The modelling scenarios that inform the EMBA are for a vessel collision.

The EMBA does not represent the extent of the predicted impact of a highly unlikely hydrocarbon release. Rather, the EMBA represents the merged area of many possible paths that a highly unlikely hydrocarbon release could travel, which depends on the weather and ocean conditions at the time of a release. This

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means that in the highly unlikely event that a hydrocarbon release does occur, the whole EMBA would not be affected. The specific and minimal part of the EMBA that is affected will only be known if there is a release.

Feedback

If you have feedback specific to the proposed activities, we welcome your feedback via email at feedback@woodside.com, via phone call at 1800 442 977 or via the feedback form on our website by **28 May 2026**. Alternatively, Woodside is willing to consider and accept your feedback via a means which suits you.

Your feedback and our response will be included in our EPs. The Commonwealth EP 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). The State EP will be submitted to the Department of Mines, Petroleum and Exploration (DMPE) for acceptance in accordance with the *Petroleum (Submerged Lands) (Environment) Regulations 2012* (WA). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

You may request that particular information you provide during consultation not be published in the EP made available on the NOPSEMA website. Please let us know if you request that particular information not be published, and we will make your request known to NOPSEMA.

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 Feedback

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6.1.9 Email sent to Australian Communications and Media Authority (ACMA); Vocus – 28 April 2026

Woodside is planning to submit the Browse to North West Shelf (NWS) Project Geophysical and Geotechnical (GPGT) Surveys Commonwealth and State Environment Plans (EP).

The Operational Area for the **Browse to NWS Project GPGT Surveys (Commonwealth) EP** covers several petroleum titles in Commonwealth waters: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R, and G-8-AP. It includes:

- Operational Area A – the Torosa field, located approximately 430 km north-northwest of Broome.
- Operational Area B – the Calliance and Brecknock fields, located approximately 370 km north-northwest of Broome.

The Operational Area for the **Browse to NWS Project GPGT Surveys (State) EP** overlaps Petroleum Titles TR/5 R2, located in State waters approximately 430 km north-northwest of Broome.

If you would like to comment on the proposed activities, please provide feedback to Woodside by **28 May 2026** using the details below.

Overview

Woodside has previously undertaken GPGT surveys in the Browse Basin as part of earlier project concepts.

A series of new GPGT surveys is proposed to support potential future activities associated with the Browse to NWS Project. These surveys will be conducted across both Commonwealth and State waters and are organised into three Environment Plans (EPs):

- Browse to NWS Project GPGT Surveys EP (Commonwealth) – the subject of this consultation
- Browse to NWS Project GPGT Surveys EP (State) – the subject of this consultation
- Browse to NWS Project Trunkline GPGT Surveys EP (Commonwealth).

Survey data is intended to inform the design and installation of the proposed trunkline, pipelines and umbilicals, subsea structures, and the mooring systems for the two proposed floating production storage and offtake (FPSO) facilities and mobile offshore drilling units (MODUs).

Data may also contribute to assessments of existing infrastructure, support environmental and heritage studies, and assist in planning potential future project activities.

You can read more about the Browse Project on our website.

Consultation information

Consultation Information Sheets are attached, which provide additional background on our approach to consultation, and on the proposed activities including summaries of potential key impacts and risks and associated management measures. These are also available on our website.

Please also find attached a map of the submarine communication cables in the vicinity of the Operational Area.

Activity and location summary

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Browse to NWS Project GPGT Surveys Environment Plan (EP)		
	Commonwealth EP	**State EP**
Activity details	**Geophysical surveys within the Operational Area using:** • Multibeam echosounder (MBES), single beam echo sounder, altimeter • Side scan sonar (SSS) including variants such as multi-aperture and synthetic aperture sonar • Magnetometer / gradiometer and pipe tracker • Sub-bottom profiler (SBP), such as but not limited to boomer, sparker, pinger, chirp, and parametric SBP. **Geotechnical surveys within the Operational Area using:** • Box corer / grab sampler • Shallow cores and probes: piston core / gravity core / vibrocore • Borehole sampling / coring / in situ testing • Cone penetrometer testing (CPT/PCPT/CPTu). **Other survey equipment being used:** • Water sampler • Sound velocity sensor / multi-parameter conductivity-temperature-depth profiler • Ultra-short baseline (USBL) positioning system • Doppler velocity log and Inertial navigation system • Underwater camera • Underwater laser scanner • Remotely operated vehicle (ROV) • Autonomous underwater vehicle (AUV).	
Titles	• Petroleum licences: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R. • Greenhouse Gas permit G-8-AP.	• Petroleum licence: TR/5 R2.
Location	In Commonwealth waters ~ 430 km north-northwest of Broome (Operational Area A) and ~ 370 km north-northwest of Broome (Operational Area B).	In State waters ~ 430 km north-northwest of Broome.
Water depth	~ 350 m - 900 m	~ 75 m - 700 m
Timing	Anticipated to commence from ~ Q3 2027.	

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Duration	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-60 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 90 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-40 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 40 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.
Vessels	Multi-purpose vessels, uncrewed surface vessels, geotechnical drilling vessels and support vessels.	
Operational Area and exclusion zones	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within Commonwealth waters.	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within State waters.
Communication with mariners	• Commercial fishers and other marine users are permitted to use the Operational Area but should take care around operations by adhering to standard navigation rules and remain clear of the safety exclusion zone. • Marine notices will be issued prior to activity commencement to alert vessels which may be operating in waters nearby.	

Environment that May Be Affected (EMBA)

The EMBA is the largest geographic area where an unplanned event could potentially have an environmental consequence. The broadest extent of the EMBA takes into consideration planned activities and unplanned events. The EMBA has been developed combining numerous modelling outputs based on highly unlikely releases of hydrocarbons to the environment. The modelling scenarios that inform the EMBA are for a vessel collision.

The EMBA does not represent the extent of the predicted impact of a highly unlikely hydrocarbon release. Rather, the EMBA represents the merged area of many possible paths that a highly unlikely hydrocarbon release could travel, which depends on the weather and ocean conditions at the time of a release. This

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means that in the highly unlikely event that a hydrocarbon release does occur, the whole EMBA would not be affected. The specific and minimal part of the EMBA that is affected will only be known if there is a release.

Feedback

If you have feedback specific to the proposed activities, we welcome your feedback via email at feedback@woodside.com, via phone call at 1800 442 977 or via the feedback form on our website by **28 May 2026**. Alternatively, Woodside is willing to consider and accept your feedback via a means which suits you.

Your feedback and our response will be included in our EPs. The Commonwealth EP 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). The State EP will be submitted to the Department of Mines, Petroleum and Exploration (DMPE) for acceptance in accordance with the *Petroleum (Submerged Lands) (Environment) Regulations 2012* (WA). 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 Feedback

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6.1.10 Email sent to Australian Hydrographic Authority (AHO), Australian Maritime Safety Authority (AMSA) – Marine Safety – 28 April 2026

Woodside is planning to submit the Browse to North West Shelf (NWS) Project Geophysical and Geotechnical (GPGT) Surveys Commonwealth and State Environment Plans (EP).

The Operational Area for the **Browse to NWS Project GPGT Surveys (Commonwealth) EP** covers several petroleum titles in Commonwealth waters: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R, and G-8-AP. It includes:

- Operational Area A – the Torosa field, located approximately 430 km north-northwest of Broome.
- Operational Area B – the Calliance and Brecknock fields, located approximately 370 km north-northwest of Broome.

The Operational Area for the **Browse to NWS Project GPGT Surveys (State) EP** overlaps Petroleum Titles TR/5 R2, located in State waters approximately 430 km north-northwest of Broome.

If you would like to comment on the proposed activities, please provide feedback to Woodside by **28 May 2026** using the details below.

Overview

Woodside has previously undertaken GPGT surveys in the Browse Basin as part of earlier project concepts.

A series of new GPGT surveys is proposed to support potential future activities associated with the Browse to NWS Project. These surveys will be conducted across both Commonwealth and State waters and are organised into three Environment Plans (EPs):

- Browse to NWS Project GPGT Surveys EP (Commonwealth) – the subject of this consultation
- Browse to NWS Project GPGT Surveys EP (State) – the subject of this consultation
- Browse to NWS Project Trunkline GPGT Surveys EP (Commonwealth).

Survey data is intended to inform the design and installation of the proposed trunkline, pipelines and umbilicals, subsea structures, and the mooring systems for the two proposed floating production storage and offtake (FPSO) facilities and mobile offshore drilling units (MODUs).

Data may also contribute to assessments of existing infrastructure, support environmental and heritage studies, and assist in planning potential future project activities.

You can read more about the Browse Project on our website.

Consultation information

Consultation Information Sheets are attached, which provide additional background on our approach to consultation, and on the proposed activities including summaries of potential key impacts and risks and associated management measures. These are also available on our website.

Please also find attached a vessel density map and GIS shape files.

Activity and location summary

Browse to NWS Project GPGT Surveys Environment Plan (EP)		
	Commonwealth EP	**State EP**

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Activity details	**Geophysical surveys within the Operational Area using:** • Multibeam echosounder (MBES), single beam echo sounder, altimeter • Side scan sonar (SSS) including variants such as multi-aperture and synthetic aperture sonar • Magnetometer / gradiometer and pipe tracker • Sub-bottom profiler (SBP), such as but not limited to boomer, sparker, pinger, chirp, and parametric SBP. **Geotechnical surveys within the Operational Area using:** • Box corer / grab sampler • Shallow cores and probes: piston core / gravity core / vibrocore • Borehole sampling / coring / in situ testing • Cone penetrometer testing (CPT/PCPT/CPTu). **Other survey equipment being used:** • Water sampler • Sound velocity sensor / multi-parameter conductivity-temperature-depth profiler • Ultra-short baseline (USBL) positioning system • Doppler velocity log and Inertial navigation system • Underwater camera • Underwater laser scanner • Remotely operated vehicle (ROV) • Autonomous underwater vehicle (AUV).	
Titles	• Petroleum licences: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R. • Greenhouse Gas permit G-8-AP.	• Petroleum licence: TR/5 R2.
Location	In Commonwealth waters ~ 430 km north-northwest of Broome (Operational Area A) and ~ 370 km north-northwest of Broome (Operational Area B).	In State waters ~ 430 km north-northwest of Broome.
Water depth	~ 350 m - 900 m	~ 75 m - 700 m
Timing	Anticipated to commence from ~ Q3 2027.	

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Duration	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-60 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 90 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-40 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 40 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.
Vessels	Multi-purpose vessels, uncrewed surface vessels, geotechnical drilling vessels and support vessels.	
Operational Area and exclusion zones	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within Commonwealth waters.	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within State waters.
Communication with mariners	• Commercial fishers and other marine users are permitted to use the Operational Area but should take care around operations by adhering to standard navigation rules and remain clear of the safety exclusion zone. • Marine notices will be issued prior to activity commencement to alert vessels which may be operating in waters nearby.	

Environment that May Be Affected (EMBA)

The EMBA is the largest geographic area where an unplanned event could potentially have an environmental consequence. The broadest extent of the EMBA takes into consideration planned activities and unplanned events. The EMBA has been developed combining numerous modelling outputs based on highly unlikely releases of hydrocarbons to the environment. The modelling scenarios that inform the EMBA are for a vessel collision.

The EMBA does not represent the extent of the predicted impact of a highly unlikely hydrocarbon release. Rather, the EMBA represents the merged area of many possible paths that a highly unlikely hydrocarbon release could travel, which depends on the weather and ocean conditions at the time of a release. This

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means that in the highly unlikely event that a hydrocarbon release does occur, the whole EMBA would not be affected. The specific and minimal part of the EMBA that is affected will only be known if there is a release.

Notifications

Please note that Woodside will:

- Notify the AHO no less than 4 weeks before activities commence.
- Notify AMSA's Response Centre (ARC) at least 24-48 hours before activities commence.
- 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, and installation of Automatic Identification System (AIS) units.

Feedback

If you have feedback specific to the proposed activities, we welcome your feedback via email at feedback@woodside.com, via phone call at 1800 442 977 or via the feedback form on our website by **28 May 2026**. Alternatively, Woodside is willing to consider and accept your feedback via a means which suits you.

Your feedback and our response will be included in our EPs. The Commonwealth EP 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). The State EP will be submitted to the Department of Mines, Petroleum and Exploration (DMPE) for acceptance in accordance with the *Petroleum (Submerged Lands) (Environment) Regulations 2012* (WA). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

You may request that particular information you provide during consultation not be published in the EP made available on the NOPSEMA website. Please let us know if you request that particular information not be published, and we will make your request known to NOPSEMA.

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 Feedback

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6.1.11 Email sent to Australian Fisheries Management Authority (AFMA); Commonwealth Fisheries Association (CFA); Department of Agriculture, Fisheries and Forestry (DAFF) – Fisheries; North West Slope Trawl Fishery Licence Holders – 28 April 2026

Woodside is planning to submit the Browse to North West Shelf (NWS) Project Geophysical and Geotechnical (GPGT) Surveys Commonwealth and State Environment Plans (EP).

The Operational Area for the **Browse to NWS Project GPGT Surveys (Commonwealth) EP** covers several petroleum titles in Commonwealth waters: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R, and G-8-AP. It includes:

- Operational Area A – the Torosa field, located approximately 430 km north-northwest of Broome.
- Operational Area B – the Calliance and Brecknock fields, located approximately 370 km north-northwest of Broome.

The Operational Area for the **Browse to NWS Project GPGT Surveys (State) EP** overlaps Petroleum Titles TR/5 R2, located in State waters approximately 430 km north-northwest of Broome.

If you would like to comment on the proposed activities, please provide feedback to Woodside by **28 May 2026** using the details below.

Overview

Woodside has previously undertaken GPGT surveys in the Browse Basin as part of earlier project concepts.

A series of new GPGT surveys is proposed to support potential future activities associated with the Browse to NWS Project. These surveys will be conducted across both Commonwealth and State waters and are organised into three Environment Plans (EPs):

- Browse to NWS Project GPGT Surveys EP (Commonwealth) – the subject of this consultation
- Browse to NWS Project GPGT Surveys EP (State) – the subject of this consultation
- Browse to NWS Project Trunkline GPGT Surveys EP (Commonwealth).

Survey data is intended to inform the design and installation of the proposed trunkline, pipelines and umbilicals, subsea structures, and the mooring systems for the two proposed floating production storage and offtake (FPSO) facilities and mobile offshore drilling units (MODUs).

Data may also contribute to assessments of existing infrastructure, support environmental and heritage studies, and assist in planning potential future project activities.

You can read more about the Browse Project on our website.

Consultation information

Consultation Information Sheets are attached, which provide additional background on our approach to consultation, and on the proposed activities including summaries of potential key impacts and risks and associated management measures. These are also available on our website.

Activity and location summary

Browse to NWS Project GPGT Surveys Environment Plan (EP)		
	Commonwealth EP	**State EP**

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Activity details	**Geophysical surveys within the Operational Area using:** • Multibeam echosounder (MBES), single beam echo sounder, altimeter • Side scan sonar (SSS) including variants such as multi-aperture and synthetic aperture sonar • Magnetometer / gradiometer and pipe tracker • Sub-bottom profiler (SBP), such as but not limited to boomer, sparker, pinger, chirp, and parametric SBP. **Geotechnical surveys within the Operational Area using:** • Box corer / grab sampler • Shallow cores and probes: piston core / gravity core / vibrocore • Borehole sampling / coring / in situ testing • Cone penetrometer testing (CPT/PCPT/CPTu). **Other survey equipment being used:** • Water sampler • Sound velocity sensor / multi-parameter conductivity-temperature-depth profiler • Ultra-short baseline (USBL) positioning system • Doppler velocity log and Inertial navigation system • Underwater camera • Underwater laser scanner • Remotely operated vehicle (ROV) • Autonomous underwater vehicle (AUV).	
Titles	• Petroleum licences: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R. • Greenhouse Gas permit G-8-AP.	• Petroleum licence: TR/5 R2.
Location	In Commonwealth waters ~ 430 km north-northwest of Broome (Operational Area A) and ~ 370 km north-northwest of Broome (Operational Area B).	In State waters ~ 430 km north-northwest of Broome.
Water depth	~ 350 m - 900 m	~ 75 m - 700 m
Timing	Anticipated to commence from ~ Q3 2027.	

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Duration	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-60 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 90 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-40 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 40 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.
Vessels	Multi-purpose vessels, uncrewed surface vessels, geotechnical drilling vessels and support vessels.	
Operational Area and exclusion zones	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within Commonwealth waters.	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within State waters.
Communication with mariners	• Commercial fishers and other marine users are permitted to use the Operational Area but should take care around operations by adhering to standard navigation rules and remain clear of the safety exclusion zone. • Marine notices will be issued prior to activity commencement to alert vessels which may be operating in waters nearby.	

Environment that May Be Affected (EMBA)

The EMBA is the largest geographic area where an unplanned event could potentially have an environmental consequence. The broadest extent of the EMBA takes into consideration planned activities and unplanned events. The EMBA has been developed combining numerous modelling outputs based on highly unlikely releases of hydrocarbons to the environment. The modelling scenarios that inform the EMBA are for a vessel collision.

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The EMBA does not represent the extent of the predicted impact of a highly unlikely hydrocarbon release. Rather, the EMBA represents the merged area of many possible paths that a highly unlikely hydrocarbon release could travel, which depends on the weather and ocean conditions at the time of a release. This means that in the highly unlikely event that a hydrocarbon release does occur, the whole EMBA would not be affected. The specific and minimal part of the EMBA that is affected will only be known if there is a release.

Commonwealth fisheries

Commonwealth fisheries active in the Operational Area:

- North West Slope Trawl Fishery

Commonwealth fisheries active in the EMBA:

- North West Slope Trawl Fishery

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.

Notifications

Please let us know if you **do not** require notification prior to and on completion of the proposed activities, otherwise notifications will be provided. .

Feedback

If you have feedback specific to the proposed activities, we welcome your feedback via email at feedback@woodside.com, via phone call at 1800 442 977 or via the feedback form on our website by **28 May 2026**. Alternatively, Woodside is willing to consider and accept your feedback via a means which suits you.

Your feedback and our response will be included in our EPs. The Commonwealth EP 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). The State EP will be submitted to the Department of Mines, Petroleum and Exploration (DMPE) for acceptance in accordance with the *Petroleum (Submerged Lands) (Environment) Regulations 2012* (WA). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

You may request that particular information you provide during consultation not be published in the EP made available on the NOPSEMA website. Please let us know if you request that particular information not be published, and we will make your request known to NOPSEMA.

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 Feedback

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6.1.12 Email sent to Australian Southern Bluefin Tuna Industry Association (ASBTIA); Tuna Australia – 28 April 2026

Woodside is planning to submit the Browse to North West Shelf (NWS) Project Geophysical and Geotechnical (GPGT) Surveys Commonwealth and State Environment Plans (EP).

The Operational Area for the **Browse to NWS Project GPGT Surveys (Commonwealth) EP** covers several petroleum titles in Commonwealth waters: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R, and G-8-AP. It includes:

- Operational Area A – the Torosa field, located approximately 430 km north-northwest of Broome.
- Operational Area B – the Calliance and Brecknock fields, located approximately 370 km north-northwest of Broome.

The Operational Area for the **Browse to NWS Project GPGT Surveys (State) EP** overlaps Petroleum Titles TR/5 R2, located in State waters approximately 430 km north-northwest of Broome.

If you would like to comment on the proposed activities, please provide feedback to Woodside by **28 May 2026** using the details below.

Overview

Woodside has previously undertaken GPGT surveys in the Browse Basin as part of earlier project concepts.

A series of new GPGT surveys is proposed to support potential future activities associated with the Browse to NWS Project. These surveys will be conducted across both Commonwealth and State waters and are organised into three Environment Plans (EPs):

- Browse to NWS Project GPGT Surveys EP (Commonwealth) – the subject of this consultation
- Browse to NWS Project GPGT Surveys EP (State) – the subject of this consultation
- Browse to NWS Project Trunkline GPGT Surveys EP (Commonwealth).

Survey data is intended to inform the design and installation of the proposed trunkline, pipelines and umbilicals, subsea structures, and the mooring systems for the two proposed floating production storage and offtake (FPSO) facilities and mobile offshore drilling units (MODUs).

Data may also contribute to assessments of existing infrastructure, support environmental and heritage studies, and assist in planning potential future project activities.

You can read more about the Browse Project on our website.

Consultation information

Consultation Information Sheets are attached, which provide additional background on our approach to consultation, and on the proposed activities including summaries of potential key impacts and risks and associated management measures. These are also available on our website.

Activity and location summary

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Browse to NWS Project GPGT Surveys Environment Plan (EP)		
	Commonwealth EP	**State EP**
Activity details	**Geophysical surveys within the Operational Area using:** • Multibeam echosounder (MBES), single beam echo sounder, altimeter • Side scan sonar (SSS) including variants such as multi-aperture and synthetic aperture sonar • Magnetometer / gradiometer and pipe tracker • Sub-bottom profiler (SBP), such as but not limited to boomer, sparker, pinger, chirp, and parametric SBP. **Geotechnical surveys within the Operational Area using:** • Box corer / grab sampler • Shallow cores and probes: piston core / gravity core / vibrocore • Borehole sampling / coring / in situ testing • Cone penetrometer testing (CPT/PCPT/CPTu). **Other survey equipment being used:** • Water sampler • Sound velocity sensor / multi-parameter conductivity-temperature-depth profiler • Ultra-short baseline (USBL) positioning system • Doppler velocity log and Inertial navigation system • Underwater camera • Underwater laser scanner • Remotely operated vehicle (ROV) • Autonomous underwater vehicle (AUV).	
Titles	• Petroleum licences: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R. • Greenhouse Gas permit G-8-AP.	• Petroleum licence: TR/5 R2.
Location	In Commonwealth waters ~ 430 km north-northwest of Broome (Operational Area A) and ~ 370 km north-northwest of Broome (Operational Area B).	In State waters ~ 430 km north-northwest of Broome.
Water depth	~ 350 m - 900 m	~ 75 m - 700 m
Timing	Anticipated to commence from ~ Q3 2027.	

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Duration	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-60 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 90 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-40 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 40 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.
Vessels	Multi-purpose vessels, uncrewed surface vessels, geotechnical drilling vessels and support vessels.	
Operational Area and exclusion zones	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within Commonwealth waters.	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within State waters.
Communication with mariners	• Commercial fishers and other marine users are permitted to use the Operational Area but should take care around operations by adhering to standard navigation rules and remain clear of the safety exclusion zone. • Marine notices will be issued prior to activity commencement to alert vessels which may be operating in waters nearby.	

Environment that May Be Affected (EMBA)

The EMBA is the largest geographic area where an unplanned event could potentially have an environmental consequence. The broadest extent of the EMBA takes into consideration planned activities and unplanned events. The EMBA has been developed combining numerous modelling outputs based on highly unlikely releases of hydrocarbons to the environment. The modelling scenarios that inform the EMBA are for a vessel collision.

The EMBA does not represent the extent of the predicted impact of a highly unlikely hydrocarbon release. Rather, the EMBA represents the merged area of many possible paths that a highly unlikely hydrocarbon release could travel, which depends on the weather and ocean conditions at the time of a release. This

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means that in the highly unlikely event that a hydrocarbon release does occur, the whole EMBA would not be affected. The specific and minimal part of the EMBA that is affected will only be known if there is a release.

Commonwealth fisheries

Commonwealth fisheries active in the Operational Area:

- North West Slope Trawl Fishery

Commonwealth fisheries active in the EMBA:

- North West Slope Trawl Fishery

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.

Notifications

Please let us know if you require notification prior to and on completion of the proposed activities.

Feedback

If you have feedback specific to the proposed activities, we welcome your feedback via email at feedback@woodside.com, via phone call at 1800 442 977 or via the feedback form on our website by **28 May 2026**. Alternatively, Woodside is willing to consider and accept your feedback via a means which suits you.

Your feedback and our response will be included in our EPs. The Commonwealth EP 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). The State EP will be submitted to the Department of Mines, Petroleum and Exploration (DMPE) for acceptance in accordance with the *Petroleum (Submerged Lands) (Environment) Regulations 2012* (WA). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

You may request that particular information you provide during consultation not be published in the EP made available on the NOPSEMA website. Please let us know if you request that particular information not be published, and we will make your request known to NOPSEMA.

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 Feedback

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6.1.13 Email sent to Department of Agriculture, Fisheries and Forestry (DAFF) – Biosecurity – 28 April 2026

Woodside is planning to submit the Browse to North West Shelf (NWS) Project Geophysical and Geotechnical (GPGT) Surveys Commonwealth and State Environment Plans (EP).

The Operational Area for the **Browse to NWS Project GPGT Surveys (Commonwealth) EP** covers several petroleum titles in Commonwealth waters: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R, and G-8-AP. It includes:

- Operational Area A – the Torosa field, located approximately 430 km north-northwest of Broome.
- Operational Area B – the Calliance and Brecknock fields, located approximately 370 km north-northwest of Broome.

The Operational Area for the **Browse to NWS Project GPGT Surveys (State) EP** overlaps Petroleum Titles TR/5 R2, located in State waters approximately 430 km north-northwest of Broome.

If you would like to comment on the proposed activities, please provide feedback to Woodside by **28 May 2026** using the details below.

Overview

Woodside has previously undertaken GPGT surveys in the Browse Basin as part of earlier project concepts.

A series of new GPGT surveys is proposed to support potential future activities associated with the Browse to NWS Project. These surveys will be conducted across both Commonwealth and State waters and are organised into three Environment Plans (EPs):

- Browse to NWS Project GPGT Surveys EP (Commonwealth) – the subject of this consultation
- Browse to NWS Project GPGT Surveys EP (State) – the subject of this consultation
- Browse to NWS Project Trunkline GPGT Surveys EP (Commonwealth).

Survey data is intended to inform the design and installation of the proposed trunkline, pipelines and umbilicals, subsea structures, and the mooring systems for the two proposed floating production storage and offtake (FPSO) facilities and mobile offshore drilling units (MODUs).

Data may also contribute to assessments of existing infrastructure, support environmental and heritage studies, and assist in planning potential future project activities.

You can read more about the Browse Project on our website.

Consultation information

Consultation Information Sheets are attached, which provide additional background on our approach to consultation, and on the proposed activities including summaries of potential key impacts and risks and associated management measures. These are also available on our website.

Activity and location summary

Browse to NWS Project GPGT Surveys Environment Plan (EP)		
	Commonwealth EP	**State EP**

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Activity details	**Geophysical surveys within the Operational Area using:** • Multibeam echosounder (MBES), single beam echo sounder, altimeter • Side scan sonar (SSS) including variants such as multi-aperture and synthetic aperture sonar • Magnetometer / gradiometer and pipe tracker • Sub-bottom profiler (SBP), such as but not limited to boomer, sparker, pinger, chirp, and parametric SBP. **Geotechnical surveys within the Operational Area using:** • Box corer / grab sampler • Shallow cores and probes: piston core / gravity core / vibrocore • Borehole sampling / coring / in situ testing • Cone penetrometer testing (CPT/PCPT/CPTu). **Other survey equipment being used:** • Water sampler • Sound velocity sensor / multi-parameter conductivity-temperature-depth profiler • Ultra-short baseline (USBL) positioning system • Doppler velocity log and Inertial navigation system • Underwater camera • Underwater laser scanner • Remotely operated vehicle (ROV) • Autonomous underwater vehicle (AUV).	
Titles	• Petroleum licences: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R. • Greenhouse Gas permit G-8-AP.	• Petroleum licence: TR/5 R2.
Location	In Commonwealth waters ~ 430 km north-northwest of Broome (Operational Area A) and ~ 370 km north-northwest of Broome (Operational Area B).	In State waters ~ 430 km north-northwest of Broome.
Water depth	~ 350 m - 900 m	~ 75 m - 700 m
Timing	Anticipated to commence from ~ Q3 2027.	

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Duration	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-60 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 90 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-40 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 40 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.
Vessels	Multi-purpose vessels, uncrewed surface vessels, geotechnical drilling vessels and support vessels.	
Operational Area and exclusion zones	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within Commonwealth waters.	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within State waters.
Communication with mariners	• Commercial fishers and other marine users are permitted to use the Operational Area but should take care around operations by adhering to standard navigation rules and remain clear of the safety exclusion zone. • Marine notices will be issued prior to activity commencement to alert vessels which may be operating in waters nearby.	

Environment that May Be Affected (EMBA)

The EMBA is the largest geographic area where an unplanned event could potentially have an environmental consequence. The broadest extent of the EMBA takes into consideration planned activities and unplanned events. The EMBA has been developed combining numerous modelling outputs based on highly unlikely releases of hydrocarbons to the environment. The modelling scenarios that inform the EMBA are for a vessel collision.

The EMBA does not represent the extent of the predicted impact of a highly unlikely hydrocarbon release. Rather, the EMBA represents the merged area of many possible paths that a highly unlikely hydrocarbon release could travel, which depends on the weather and ocean conditions at the time of a release. This

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means that in the highly unlikely event that a hydrocarbon release does occur, the whole EMBA would not be affected. The specific and minimal part of the EMBA that is affected will only be known if there is a release.

Biosecurity

With respect to the biosecurity matters, please note the following information below:

<table>
<tr><th colspan="2">Environment description</th></tr>
<tr><td colspan="2">Project vessels and survey equipment used during the petroleum activity present a potential pathway for the introduction of invasive marine species (IMS) into the operational area. IMS may be transported via vessel movements and equipment mobilised from other regions.
Potential sources include:
• Biofouling on vessel hulls (e.g. niches, sea chests, unpainted surfaces)
• Ballast water uptake and discharge
• Submersible geophysical and geotechnical equipment previously used on other projects
• International or interstate vessel mobilisation to the operational area.
The establishment of invasive marine species (IMS) can result in environmental and economic consequences, particularly where suitable habitat allows them to spread and persist.
Potential impacts include:
• Predation on native species
• Competition for food, space, and light
• Hybridisation with endemic species
• Alteration of local ecosystems
• Economic impacts (e.g. infrastructure fouling, fisheries losses)
• High cost and difficulty of eradication once established.</td></tr>
<tr><th colspan="2">Browse to NWS Project GPGT Surveys (Commonwealth) EP</th></tr>
<tr><th>Potential IMS risk</th><th>IMS mitigation management</th></tr>
<tr><td>• It is not credible for IMS to be introduced and establish on the seabed or subsea structures in the Operational Area as these deep waters are not conducive to the settlement and establishment of IMS. The likelihood of IMS being introduced and establishing viable populations within the Operational Area or immediate surrounds is considered remote.
• Given the low likelihood of IMS translocation to and colonisation within the Operational Area, project activities are unlikely to result in establishment of IMS, and as such will not adversely affect other marine user activities in the region.</td><td>• 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 as applicable to vessel class.
• Woodside’s IMS risk assessment process will be applied to project vessels and immersible equipment undertaking the activities.</td></tr>
</table>

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Browse to NWS Project GPGT Surveys (State) EP	
Potential IMS risk	**IMS mitigation management**
• Given the low likelihood of IMS translocation to and colonisation within the Operational Area, project activities are unlikely to result in establishment of IMS, and as such will not adversely affect other marine user activities in the region. • Introduction of IMS may result in changes to the ecology of the Operational Area and competition with existing biota.	• 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 as applicable to vessel class. • Woodside's IMS risk assessment process will be applied to project vessels and immersible equipment undertaking the activities. • In addition to the requirements of the IMS risk assessment process, all vessels and immersible equipment planning to enter and stay within the Operational Area for a period > 48 hours (cumulative) will be inspected by a Certified IMS Inspector prior to mobilisation to Scott Reef.

Feedback

If you have feedback specific to the proposed activities, we welcome your feedback via email at feedback@woodside.com, via phone call at 1800 442 977 or via the feedback form on our website by **28 May 2026**. Alternatively, Woodside is willing to consider and accept your feedback via a means which suits you.

Your feedback and our response will be included in our EPs. The Commonwealth EP 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). The State EP will be submitted to the Department of Mines, Petroleum and Exploration (DMPE) for acceptance in accordance with the *Petroleum (Submerged Lands) (Environment) Regulations 2012* (WA). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

You may request that particular information you provide during consultation not be published in the EP made available on the NOPSEMA website. Please let us know if you request that particular information not be published, and we will make your request known to NOPSEMA.

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 Feedback

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6.1.14 Email sent to Director of National Parks (DNP) – 28 April 2026

Woodside is planning to submit the Browse to North West Shelf (NWS) Project Geophysical and Geotechnical (GPGT) Surveys Commonwealth and State Environment Plans (EP).

The Operational Area for the **Browse to NWS Project GPGT Surveys (Commonwealth) EP** covers several petroleum titles in Commonwealth waters: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R, and G-8-AP. It includes:

- Operational Area A – the Torosa field, located approximately 430 km north-northwest of Broome.
- Operational Area B – the Calliance and Brecknock fields, located approximately 370 km north-northwest of Broome.

The Operational Area for the **Browse to NWS Project GPGT Surveys (State) EP** overlaps Petroleum Titles TR/5 R2, located in State waters approximately 430 km north-northwest of Broome.

If you would like to comment on the proposed activities, please provide feedback to Woodside by **28 May 2026** using the details below.

Overview

Woodside has previously undertaken GPGT surveys in the Browse Basin as part of earlier project concepts.

A series of new GPGT surveys is proposed to support potential future activities associated with the Browse to NWS Project. These surveys will be conducted across both Commonwealth and State waters and are organised into three Environment Plans (EPs):

- Browse to NWS Project GPGT Surveys EP (Commonwealth) – the subject of this consultation
- Browse to NWS Project GPGT Surveys EP (State) – the subject of this consultation
- Browse to NWS Project Trunkline GPGT Surveys EP (Commonwealth).

Survey data is intended to inform the design and installation of the proposed trunkline, pipelines and umbilicals, subsea structures, and the mooring systems for the two proposed floating production storage and offtake (FPSO) facilities and mobile offshore drilling units (MODUs).

Data may also contribute to assessments of existing infrastructure, support environmental and heritage studies, and assist in planning potential future project activities.

You can read more about the Browse Project on our website.

Consultation information

Consultation Information Sheets are attached, which provide additional background on our approach to consultation, and on the proposed activities including summaries of potential key impacts and risks and associated management measures. These are also available on our website.

Please also find attached GIS shape files.

Activity and location summary

Browse to NWS Project GPGT Surveys Environment Plan (EP)		
	Commonwealth EP	**State EP**

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<table>
<tr><td>Activity details</td><td colspan="2">Geophysical surveys within the Operational Area using:
Multibeam echosounder (MBES), single beam echo sounder, altimeter
Side scan sonar (SSS) including variants such as multi-aperture and synthetic aperture sonar
Magnetometer / gradiometer and pipe tracker
Sub-bottom profiler (SBP), such as but not limited to boomer, sparker, pinger, chirp, and parametric SBP.
Geotechnical surveys within the Operational Area using:
Box corer / grab sampler
Shallow cores and probes: piston core / gravity core / vibrocore
Borehole sampling / coring / in situ testing
Cone penetrometer testing (CPT/PCPT/CPTu).
Other survey equipment being used:
Water sampler
Sound velocity sensor / multi-parameter conductivity-temperature-depth profiler
Ultra-short baseline (USBL) positioning system
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Underwater camera
Underwater laser scanner
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<tr><td>Timing</td><td colspan="2">Anticipated to commence from ~ Q3 2027.</td></tr>
<tr><td>Duration</td><td>Surveys anticipated to be completed over several multi-week campaigns (typically 20-60 days in duration) split over the five-year duration of the EP.</td><td>Surveys anticipated to be completed over several multi-week campaigns (typically 20-40 days in duration) split over the five-year duration of the EP.</td></tr>
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Vessels	Multi-purpose vessels, uncrewed surface vessels, geotechnical drilling vessels and support vessels.	
Operational Area and exclusion zones	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within Commonwealth waters.	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within State waters.
Communication with mariners	• Commercial fishers and other marine users are permitted to use the Operational Area but should take care around operations by adhering to standard navigation rules and remain clear of the safety exclusion zone. • Marine notices will be issued prior to activity commencement to alert vessels which may be operating in waters nearby.	

Environment that May Be Affected (EMBA)

The EMBA is the largest geographic area where an unplanned event could potentially have an environmental consequence. The broadest extent of the EMBA takes into consideration planned activities and unplanned events. The EMBA has been developed combining numerous modelling outputs based on highly unlikely releases of hydrocarbons to the environment. The modelling scenarios that inform the EMBA are for a vessel collision.

The EMBA does not represent the extent of the predicted impact of a highly unlikely hydrocarbon release. Rather, the EMBA represents the merged area of many possible paths that a highly unlikely hydrocarbon release could travel, which depends on the weather and ocean conditions at the time of a release. This means that in the highly unlikely event that a hydrocarbon release does occur, the whole EMBA would not be affected. The specific and minimal part of the EMBA that is affected will only be known if there is a release.

Australian Marine Parks (AMPs)

We note Australian Government Guidance on consultation activities and confirm that:

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Browse to NWS Project GPGT Surveys (Commonwealth) EP • The Operational Area does not overlap any AMPs. The closest are: ○ Kimberley Multiple Use Zone ~ 101 km south of Operational Area A, ~ 33 km south of Operational Area B.
Browse to NWS Project GPGT Surveys (State) EP • The Operational Area does not overlap any AMPs. The closest are: ○ Kimberley Multiple Use Zone ~ 110 km south.

- The worst-case credible spill scenario access in these EPs is a vessel collision. Through review of hydrocarbon spill modelling, and with consideration of a 50 ppb dissolved and 100 ppb entrained hydrocarbon threshold, the following AMPs may be contacted in the event of a spill:
  - Ashmore Reef Commonwealth Marine Reserve
- 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 the values of any 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 these EPs 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, we welcome your feedback via email at feedback@woodside.com, via phone call at 1800 442 977 or via the feedback form on our website by **28 May 2026**. Alternatively, Woodside is willing to consider and accept your feedback via a means which suits you.

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6.1.15 Email sent to Department of Primary Industries and Regional Development (DPIRD) – 28 April 2026

Woodside is planning to submit the Browse to North West Shelf (NWS) Project Geophysical and Geotechnical (GPGT) Surveys Commonwealth and State Environment Plans (EP).

The Operational Area for the **Browse to NWS Project GPGT Surveys (Commonwealth) EP** covers several petroleum titles in Commonwealth waters: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R, and G-8-AP. It includes:

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The Operational Area for the **Browse to NWS Project GPGT Surveys (State) EP** overlaps Petroleum Titles TR/5 R2, located in State waters approximately 430 km north-northwest of Broome.

If you would like to comment on the proposed activities, please provide feedback to Woodside by **28 May 2026** using the details below.

Overview

Woodside has previously undertaken GPGT surveys in the Browse Basin as part of earlier project concepts.

A series of new GPGT surveys is proposed to support potential future activities associated with the Browse to NWS Project. These surveys will be conducted across both Commonwealth and State waters and are organised into three Environment Plans (EPs):

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Data may also contribute to assessments of existing infrastructure, support environmental and heritage studies, and assist in planning potential future project activities.

You can read more about the Browse Project on our website.

Consultation information

Consultation Information Sheets are attached, which provide additional background on our approach to consultation, and on the proposed activities including summaries of potential key impacts and risks and associated management measures. These are also available on our website.

Activity and location summary

Browse to NWS Project GPGT Surveys Environment Plan (EP)		
	Commonwealth EP	**State EP**

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Activity details	**Geophysical surveys within the Operational Area using:** • Multibeam echosounder (MBES), single beam echo sounder, altimeter • Side scan sonar (SSS) including variants such as multi-aperture and synthetic aperture sonar • Magnetometer / gradiometer and pipe tracker • Sub-bottom profiler (SBP), such as but not limited to boomer, sparker, pinger, chirp, and parametric SBP. **Geotechnical surveys within the Operational Area using:** • Box corer / grab sampler • Shallow cores and probes: piston core / gravity core / vibrocore • Borehole sampling / coring / in situ testing • Cone penetrometer testing (CPT/PCPT/CPTu). **Other survey equipment being used:** • Water sampler • Sound velocity sensor / multi-parameter conductivity-temperature-depth profiler • Ultra-short baseline (USBL) positioning system • Doppler velocity log and Inertial navigation system • Underwater camera • Underwater laser scanner • Remotely operated vehicle (ROV) • Autonomous underwater vehicle (AUV).	
Titles	• Petroleum licences: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R. • Greenhouse Gas permit G-8-AP.	• Petroleum licence: TR/5 R2.
Location	In Commonwealth waters ~ 430 km north-northwest of Broome (Operational Area A) and ~ 370 km north-northwest of Broome (Operational Area B).	In State waters ~ 430 km north-northwest of Broome.
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Timing	Anticipated to commence from ~ Q3 2027.	

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Duration	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-60 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 90 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-40 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 40 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.
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means that in the highly unlikely event that a hydrocarbon release does occur, the whole EMBA would not be affected. The specific and minimal part of the EMBA that is affected will only be known if there is a release.

State fisheries

State fisheries active in the Operational Area:

1. Marine Aquarium Fish Managed Fishery
2. Northern Demersal Scalefish Managed Fishery

State fisheries active in the EMBA:

3. Marine Aquarium Fish Managed Fishery
4. Northern Demersal Scalefish Managed Fishery
5. Mackerel Managed Fishery

Please note that Woodside has provided consultation information to the Western Australian Fishing Industry Council (WAFIC) and Recfishwest. Information provided to these bodies includes the planned timing and duration of the activities, and the spatial extent of the proposed activities (including any exclusion zones).

Woodside consults individual fishing license holders based on WAFIC's guidance and advice, whereby WAFIC:

- directly consults fishery licence holders that are assessed as having a potential for interaction in the Operational Area
- consults fisheries that are assessed as having a potential for interaction in the EMBA only in the event of an unplanned emergency scenario.

Woodside also consults with relevant Traditional Owners in the preparation of this EP.

Spill Contingency Plans

Within Woodside's Oil Pollution First Strike Plan (FSP), Woodside commits to notifying Department of Transport and Major Infrastructure (DTMI) within 2 hours of becoming aware of a marine pollution incident that occurs in or may impact State waters. Woodside also consults DTMI in the development of the FSP.

Woodside commits to notify DPIRD within 24 hours of our reporting the incident to the appropriate authority. We have noted this contact as environment@dpird.wa.gov.au and placed this in the Notification section of the FSP.

In addition, within the FSP, Woodside commits to identify and notify additional relevant persons and organisations such as, but not limited to, commercial fishers or tourism operators that may be affected during a spill event. Woodside would, at the relevant time, engage with these parties as appropriate and will re-assess relevant persons and organisations throughout the response period.

Woodside mitigates the risk of spill events through the adoption of a range of preventative controls (including engineering design) that all contribute to reducing the likelihood of a spill event to an unlikely level. The potential for hydrocarbons to reach coastal regions would be further minimised in the event of a spill by offshore response actions. Such responses would be aimed at reducing hydrocarbon contact with sensitive coastal areas, including commercially important fish species' spawning and aggregation areas.

Woodside's oil spill Operational and Scientific Monitoring (OSM) Program is executed under the Joint Industry 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 impacts. One such program is dedicated to the impacts on fisheries. The fisheries impact assessment has two objectives – to assess any physiological impacts to important fish and shellfish species and to assess targeted fish and shellfish species for hydrocarbon contamination.

Biosecurity

Woodside contracts survey vessel for the petroleum activity described in the EPs.

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Woodside works closely with contractors to ensure compliance with all requirements previously requested by DPIRD including DPIRD's policy that marine pests or disease are reported within 24 hours. A 24-hour notification will be formally captured as a notification within the EPs and communicated to vessel operators.

All 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 invasive marine species (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.

Feedback

If you have feedback specific to the proposed activities, we welcome your feedback via email at feedback@woodside.com, via phone call at 1800 442 977 or via the feedback form on our website by **28 May 2026**. Alternatively, Woodside is willing to consider and accept your feedback via a means which suits you.

Your feedback and our response will be included in our EPs. The Commonwealth EP 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). The State EP will be submitted to the Department of Mines, Petroleum and Exploration (DMPE) for acceptance in accordance with the *Petroleum (Submerged Lands) (Environment) Regulations 2012* (WA). 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 Feedback

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6.1.16 Email sent to Pilbara/Kimberly Recreational Marine Users – 28 April 2026

Woodside is planning to submit the Browse to North West Shelf (NWS) Project Geophysical and Geotechnical (GPGT) Surveys Commonwealth and State Environment Plans (EP).

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The Operational Area for the **Browse to NWS Project GPGT Surveys (State) EP** overlaps Petroleum Titles TR/5 R2, located in State waters approximately 430 km north-northwest of Broome.

If you would like to comment on the proposed activities, please provide feedback to Woodside by **28 May 2026** using the details below.

Overview

Woodside has previously undertaken GPGT surveys in the Browse Basin as part of earlier project concepts.

A series of new GPGT surveys is proposed to support potential future activities associated with the Browse to NWS Project. These surveys will be conducted across both Commonwealth and State waters and are organised into three Environment Plans (EPs):

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You can read more about the Browse Project on our website.

Consultation information

Consultation Information Sheets are attached, which provide additional background on our approach to consultation, and on the proposed activities including summaries of potential key impacts and risks and associated management measures. These are also available on our website.

Activity and location summary

Browse to NWS Project GPGT Surveys Environment Plan (EP)		
	Commonwealth EP	**State EP**

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Water depth	~ 350 m - 900 m	~ 75 m - 700 m
Timing	Anticipated to commence from ~ Q3 2027.	

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means that in the highly unlikely event that a hydrocarbon release does occur, the whole EMBA would not be affected. The specific and minimal part of the EMBA that is affected will only be known if there is a release.

Feedback

If you have feedback specific to the proposed activities, we welcome your feedback via email at feedback@woodside.com, via phone call at 1800 442 977 or via the feedback form on our website by **28 May 2026**. Alternatively, Woodside is willing to consider and accept your feedback via a means which suits you.

Your feedback and our response will be included in our EPs. The Commonwealth EP 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). The State EP will be submitted to the Department of Mines, Petroleum and Exploration (DMPE) for acceptance in accordance with the *Petroleum (Submerged Lands) (Environment) Regulations 2012* (WA). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

You may request that particular information you provide during consultation not be published in the EP made available on the NOPSEMA website. Please let us know if you request that particular information not be published, and we will make your request known to NOPSEMA.

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 Feedback

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6.1.17 Letter sent to Pilbara/Kimberly Recreational Marine Users – 28 April 2026

Please direct all responses/queries to:
Woodside Energy Feedback
t: +61 8 (1)800 442 977
e: feedback@woodside.com.au

28 April 2026

1
[redacted]

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

Dear Stakeholder

BROWSE TO NORTH WEST SHELF PROJECT GEOPHYSICAL AND GEOTECHICAL SURVEYS ENVIROMENT PLANS

Woodside is planning to submit the following Environment Plans (EPs):

1. Browse to North West Shelf (NWS) Project Geophysical and Geotechnical Surveys (GPGT) Commonwealth EP
2. Browse to North West Shelf (NWS) Project Geophysical and Geotechnical Surveys (GPGT) State EP
3. Browse to North West Shelf (NWS) Project Trunkline Geophysical and Geotechnical Surveys (GPGT) Commonwealth EP.

If you would like to comment on the proposed activities, please provide feedback to Woodside by 28 May 2026 using the details below.

Overview

Woodside has previously undertaken GPGT surveys in the Browse Basin as part of earlier project concepts.

A series of new GPGT surveys is proposed to support potential future activities associated with the Browse to NWS Project. These surveys will be conducted across both Commonwealth and State waters and are organised into three Environment Plans (EPs):

- Browse to NWS Project GPGT Surveys EP (Commonwealth)
- Browse to NWS Project GPGT Surveys EP (State)
- Browse to NWS Project Trunkline GPGT Surveys EP (Commonwealth).

Survey data is intended to inform the design and installation of the proposed trunkline, pipelines and umbilicals, subsea structures, and the mooring systems for the two proposed floating production storage and offtake (FPSO) facilities and mobile offshore drilling units (MODUs).

Data may also contribute to assessments of existing infrastructure, support environmental and heritage studies, and assist in planning potential future project activities.

You can read more about the Browse Project on our website at https://www.woodside.com/what-we-do/developments-and-exploration/browse.

Consultation information

Consultation Information Sheets for the above-mentioned EPs are enclosed, which provide additional background on our approach to consultation, and on the proposed activities including summaries of potential key impacts and risks and associated management measures. These are also available on our website at www.woodside.com/what-we-do/consultation-activities.

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Environment that May Be Affected (EMBA)

The EMBA is the largest geographic area where an unplanned event could potentially have an environmental consequence. The broadest extent of the EMBA takes into consideration planned activities and unplanned events. The EMBA has been developed combining numerous modelling outputs based on highly unlikely releases of hydrocarbons to the environment. The modelling scenarios that inform the EMBA are for a vessel collision.

The EMBA does not represent the extent of the predicted impact of a highly unlikely hydrocarbon release. Rather, the EMBA represents the merged area of many possible paths that a highly unlikely hydrocarbon release could travel, which depends on the weather and ocean conditions at the time of a release. This means that in the highly unlikely event that a hydrocarbon release does occur, the whole EMBA would not be affected. The specific and minimal part of the EMBA that is affected will only be known if there is a release.

Feedback

If you have feedback specific to the proposed activities, we welcome your feedback via email at feedback@woodside.com, via phone call at 1800 442 977 or via the feedback form at www.woodside.com/what-we-do/consultation-activities by **28 May 2026**. Alternatively, Woodside is willing to consider and accept your feedback via a means which suits you.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 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).

You may request that particular information you provide during consultation not be published in the Environment Plans made available on the NOPSEMA website. Please let us know if you request that particular information not be published, and we will make your request known to NOPSEMA.

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. You can access the brochure online through the QR code below.

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Regards

Woodside Energy Feedback

Woodside Energy
Mia Yellagonga
Karlak, 11 Mount Street
Perth WA 6000
Australia

T: 1800 442 977
E: feedback@woodside.com
www.woodside.com

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6.1.18 Email sent to Australian Institute of Marine Science (AIMS); Commonwealth Scientific and Industrial Research Organisation (CSIRO); Curtin University; Edith Cowan University (ECU); Murdoch University; University of Western Australia (UWA); Western Australian Marine Science Institution (WAMSI) – 28 April 2026

XX

Woodside is planning to submit the Browse to North West Shelf (NWS) Project Geophysical and Geotechnical (GPGT) Surveys Commonwealth and State Environment Plans (EP).

The Operational Area for the **Browse to NWS Project GPGT Surveys (Commonwealth) EP** covers several petroleum titles in Commonwealth waters: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R, and G-8-AP. It includes:

- Operational Area A – the Torosa field, located approximately 430 km north-northwest of Broome.
- Operational Area B – the Calliance and Brecknock fields, located approximately 370 km north-northwest of Broome.

The Operational Area for the **Browse to NWS Project GPGT Surveys (State) EP** overlaps Petroleum Titles TR/5 R2, located in State waters approximately 430 km north-northwest of Broome.

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Overview

Woodside has previously undertaken GPGT surveys in the Browse Basin as part of earlier project concepts.

A series of new GPGT surveys is proposed to support potential future activities associated with the Browse to NWS Project. These surveys will be conducted across both Commonwealth and State waters and are organised into three Environment Plans (EPs):

- Browse to NWS Project GPGT Surveys EP (Commonwealth) – the subject of this consultation
- Browse to NWS Project GPGT Surveys EP (State) – the subject of this consultation
- Browse to NWS Project Trunkline GPGT Surveys EP (Commonwealth).

Survey data is intended to inform the design and installation of the proposed trunkline, pipelines and umbilicals, subsea structures, and the mooring systems for the two proposed floating production storage and offtake (FPSO) facilities and mobile offshore drilling units (MODUs).

Data may also contribute to assessments of existing infrastructure, support environmental and heritage studies, and assist in planning potential future project activities.

You can read more about the Browse Project on our website.

Consultation information

Consultation Information Sheets are attached, which provide additional background on our approach to consultation, and on the proposed activities including summaries of potential key impacts and risks and associated management measures. These are also available on our website.

Woodside is seeking your advice regarding any research activities that your institution may be undertaking that may overlap with our proposed activities.

Activity and location summary

Browse to NWS Project GPGT Surveys Environment Plan (EP)

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	Commonwealth EP	State EP
Activity details	**Geophysical surveys within the Operational Area using:** • Multibeam echosounder (MBES), single beam echo sounder, altimeter • Side scan sonar (SSS) including variants such as multi-aperture and synthetic aperture sonar • Magnetometer / gradiometer and pipe tracker • Sub-bottom profiler (SBP), such as but not limited to boomer, sparker, pinger, chirp, and parametric SBP. **Geotechnical surveys within the Operational Area using:** • Box corer / grab sampler • Shallow cores and probes: piston core / gravity core / vibrocore • Borehole sampling / coring / in situ testing • Cone penetrometer testing (CPT/PCPT/CPTu). **Other survey equipment being used:** • Water sampler • Sound velocity sensor / multi-parameter conductivity-temperature-depth profiler • Ultra-short baseline (USBL) positioning system • Doppler velocity log and Inertial navigation system • Underwater camera • Underwater laser scanner • Remotely operated vehicle (ROV) • Autonomous underwater vehicle (AUV).	
Titles	• Petroleum licences: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R. • Greenhouse Gas permit G-8-AP.	• Petroleum licence: TR/5 R2.
Location	In Commonwealth waters ~ 430 km north-northwest of Broome (Operational Area A) and ~ 370 km north-northwest of Broome (Operational Area B).	In State waters ~ 430 km north-northwest of Broome.
Water depth	~ 350 m - 900 m	~ 75 m - 700 m
Timing	Anticipated to commence from ~ Q3 2027.	

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Duration	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-60 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 90 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-40 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 40 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.
Vessels	Multi-purpose vessels, uncrewed surface vessels, geotechnical drilling vessels and support vessels.	
Operational Area and exclusion zones	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within Commonwealth waters.	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within State waters.
Communication with mariners	• Commercial fishers and other marine users are permitted to use the Operational Area but should take care around operations by adhering to standard navigation rules and remain clear of the safety exclusion zone. • Marine notices will be issued prior to activity commencement to alert vessels which may be operating in waters nearby.	

Environment that May Be Affected (EMBA)

The EMBA is the largest geographic area where an unplanned event could potentially have an environmental consequence. The broadest extent of the EMBA takes into consideration planned activities and unplanned events. The EMBA has been developed combining numerous modelling outputs based on highly unlikely releases of hydrocarbons to the environment. The modelling scenarios that inform the EMBA are for a vessel collision.

The EMBA does not represent the extent of the predicted impact of a highly unlikely hydrocarbon release. Rather, the EMBA represents the merged area of many possible paths that a highly unlikely hydrocarbon release could travel, which depends on the weather and ocean conditions at the time of a release. This

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means that in the highly unlikely event that a hydrocarbon release does occur, the whole EMBA would not be affected. The specific and minimal part of the EMBA that is affected will only be known if there is a release.

Feedback

If you have feedback specific to the proposed activities, we welcome your feedback via email at feedback@woodside.com, via phone call at 1800 442 977 or via the feedback form on our website by **28 May 2026**. Alternatively, Woodside is willing to consider and accept your feedback via a means which suits you.

Your feedback and our response will be included in our EPs. The Commonwealth EP 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). The State EP will be submitted to the Department of Mines, Petroleum and Exploration (DMPE) for acceptance in accordance with the *Petroleum (Submerged Lands) (Environment) Regulations 2012* (WA). 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 Feedback

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6.1.19 Email sent to Department of Climate Change, Energy, the Environment and Water (DCCEEW); Western Australian Museum (WAM) – 28 April 2026

Woodside is planning to submit the Browse to North West Shelf (NWS) Project Geophysical and Geotechnical (GPGT) Surveys Commonwealth and State Environment Plans (EP).

The Operational Area for the **Browse to NWS Project GPGT Surveys (Commonwealth) EP** covers several petroleum titles in Commonwealth waters: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R, and G-8-AP. It includes:

- Operational Area A – the Torosa field, located approximately 430 km north-northwest of Broome.
- Operational Area B – the Calliance and Brecknock fields, located approximately 370 km north-northwest of Broome.

The Operational Area for the **Browse to NWS Project GPGT Surveys (State) EP** overlaps Petroleum Titles TR/5 R2, located in State waters approximately 430 km north-northwest of Broome.

If you would like to comment on the proposed activities, please provide feedback to Woodside by **28 May 2026** using the details below.

Overview

Woodside has previously undertaken GPGT surveys in the Browse Basin as part of earlier project concepts.

A series of new GPGT surveys is proposed to support potential future activities associated with the Browse to NWS Project. These surveys will be conducted across both Commonwealth and State waters and are organised into three Environment Plans (EPs):

- Browse to NWS Project GPGT Surveys EP (Commonwealth) – the subject of this consultation
- Browse to NWS Project GPGT Surveys EP (State) – the subject of this consultation
- Browse to NWS Project Trunkline GPGT Surveys EP (Commonwealth).

Survey data is intended to inform the design and installation of the proposed trunkline, pipelines and umbilicals, subsea structures, and the mooring systems for the two proposed floating production storage and offtake (FPSO) facilities and mobile offshore drilling units (MODUs).

Data may also contribute to assessments of existing infrastructure, support environmental and heritage studies, and assist in planning potential future project activities.

You can read more about the Browse Project on our website.

Consultation information

Consultation Information Sheets are attached, which provide additional background on our approach to consultation, and on the proposed activities including summaries of potential key impacts and risks and associated management measures. These are also available on our website.

Please also find attached the details of Commonwealth and WA shipwrecks that are relevant for this EP.

Woodside refers to the *Underwater Cultural Heritage Act 2018 (Cwth)* and the Commonwealth Government's (2024) Assessing and Managing Impacts to Underwater Cultural Heritage in Australian Waters: Guidelines on the application of the *Underwater Cultural Heritage Act* 2018.

Activity and location summary

Browse to NWS Project GPGT Surveys Environment Plan (EP)

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	Commonwealth EP	State EP
Activity details	**Geophysical surveys within the Operational Area using:** • Multibeam echosounder (MBES), single beam echo sounder, altimeter • Side scan sonar (SSS) including variants such as multi-aperture and synthetic aperture sonar • Magnetometer / gradiometer and pipe tracker • Sub-bottom profiler (SBP), such as but not limited to boomer, sparker, pinger, chirp, and parametric SBP. **Geotechnical surveys within the Operational Area using:** • Box corer / grab sampler • Shallow cores and probes: piston core / gravity core / vibrocore • Borehole sampling / coring / in situ testing • Cone penetrometer testing (CPT/PCPT/CPTu). **Other survey equipment being used:** • Water sampler • Sound velocity sensor / multi-parameter conductivity-temperature-depth profiler • Ultra-short baseline (USBL) positioning system • Doppler velocity log and Inertial navigation system • Underwater camera • Underwater laser scanner • Remotely operated vehicle (ROV) • Autonomous underwater vehicle (AUV).	
Titles	• Petroleum licences: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R. • Greenhouse Gas permit G-8-AP.	• Petroleum licence: TR/5 R2.
Location	In Commonwealth waters ~ 430 km north-northwest of Broome (Operational Area A) and ~ 370 km north-northwest of Broome (Operational Area B).	In State waters ~ 430 km north-northwest of Broome.
Water depth	~ 350 m - 900 m	~ 75 m - 700 m
Timing	Anticipated to commence from ~ Q3 2027.	

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Duration	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-60 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 90 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-40 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 40 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.
Vessels	Multi-purpose vessels, uncrewed surface vessels, geotechnical drilling vessels and support vessels.	
Operational Area and exclusion zones	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within Commonwealth waters.	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within State waters.
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Environment that May Be Affected (EMBA)

The EMBA is the largest geographic area where an unplanned event could potentially have an environmental consequence. The broadest extent of the EMBA takes into consideration planned activities and unplanned events. The EMBA has been developed combining numerous modelling outputs based on highly unlikely releases of hydrocarbons to the environment. The modelling scenarios that inform the EMBA are for a vessel collision.

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If you have feedback specific to the proposed activities, we welcome your feedback via email at feedback@woodside.com, via phone call at 1800 442 977 or via the feedback form on our website by **28 May 2026**. Alternatively, Woodside is willing to consider and accept your feedback via a means which suits you.

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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 Feedback

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6.1.20 Email sent to Department of Planning, Lands and Heritage (DPLH) – 28 April 2026

Woodside is planning to submit the Browse to North West Shelf (NWS) Project Geophysical and Geotechnical (GPGT) Surveys Commonwealth and State Environment Plans (EP).

The Operational Area for the **Browse to NWS Project GPGT Surveys (Commonwealth) EP** covers several petroleum titles in Commonwealth waters: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R, and G-8-AP. It includes:

- Operational Area A – the Torosa field, located approximately 430 km north-northwest of Broome.
- Operational Area B – the Calliance and Brecknock fields, located approximately 370 km north-northwest of Broome.

The Operational Area for the **Browse to NWS Project GPGT Surveys (State) EP** overlaps Petroleum Titles TR/5 R2, located in State waters approximately 430 km north-northwest of Broome.

If you would like to comment on the proposed activities, please provide feedback to Woodside by **28 May 2026** using the details below.

Overview

Woodside has previously undertaken GPGT surveys in the Browse Basin as part of earlier project concepts.

A series of new GPGT surveys is proposed to support potential future activities associated with the Browse to NWS Project. These surveys will be conducted across both Commonwealth and State waters and are organised into three Environment Plans (EPs):

- Browse to NWS Project GPGT Surveys EP (Commonwealth) – the subject of this consultation
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Data may also contribute to assessments of existing infrastructure, support environmental and heritage studies, and assist in planning potential future project activities.

You can read more about the Browse Project on our website.

Consultation information

Consultation Information Sheets are attached, which provide additional background on our approach to consultation, and on the proposed activities including summaries of potential key impacts and risks and associated management measures. These are also available on our website.

Please also find attached the details of WA shipwrecks that are relevant for these EPs.

Given the proximity of the proposed activities to Marine Parks, Woodside is consulting with the Department of Biodiversity, Conservation and Attractions (DBCA) for these EPs. Woodside is also consulting with the Western Australian Museum and provided it with relevant shipwreck information for these EPs.

Activity and location summary

Browse to NWS Project GPGT Surveys Environment Plan (EP)		
	Commonwealth EP	**State EP**

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Activity details	**Geophysical surveys within the Operational Area using:** • Multibeam echosounder (MBES), single beam echo sounder, altimeter • Side scan sonar (SSS) including variants such as multi-aperture and synthetic aperture sonar • Magnetometer / gradiometer and pipe tracker • Sub-bottom profiler (SBP), such as but not limited to boomer, sparker, pinger, chirp, and parametric SBP. **Geotechnical surveys within the Operational Area using:** • Box corer / grab sampler • Shallow cores and probes: piston core / gravity core / vibrocore • Borehole sampling / coring / in situ testing • Cone penetrometer testing (CPT/PCPT/CPTu). **Other survey equipment being used:** • Water sampler • Sound velocity sensor / multi-parameter conductivity-temperature-depth profiler • Ultra-short baseline (USBL) positioning system • Doppler velocity log and Inertial navigation system • Underwater camera • Underwater laser scanner • Remotely operated vehicle (ROV) • Autonomous underwater vehicle (AUV).	
Titles	• Petroleum licences: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R. • Greenhouse Gas permit G-8-AP.	• Petroleum licence: TR/5 R2.
Location	In Commonwealth waters ~ 430 km north-northwest of Broome (Operational Area A) and ~ 370 km north-northwest of Broome (Operational Area B).	In State waters ~ 430 km north-northwest of Broome.
Water depth	~ 350 m - 900 m	~ 75 m - 700 m
Timing	Anticipated to commence from ~ Q3 2027.	

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Duration	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-60 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 90 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-40 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 40 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.
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Operational Area and exclusion zones	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within Commonwealth waters.	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within State waters.
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The EMBA is the largest geographic area where an unplanned event could potentially have an environmental consequence. The broadest extent of the EMBA takes into consideration planned activities and unplanned events. The EMBA has been developed combining numerous modelling outputs based on highly unlikely releases of hydrocarbons to the environment. The modelling scenarios that inform the EMBA are for a vessel collision.

The EMBA does not represent the extent of the predicted impact of a highly unlikely hydrocarbon release. Rather, the EMBA represents the merged area of many possible paths that a highly unlikely hydrocarbon release could travel, which depends on the weather and ocean conditions at the time of a release. This

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means that in the highly unlikely event that a hydrocarbon release does occur, the whole EMBA would not be affected. The specific and minimal part of the EMBA that is affected will only be known if there is a release.

Feedback

If you have feedback specific to the proposed activities, we welcome your feedback via email at feedback@woodside.com, via phone call at 1800 442 977 or via the feedback form on our website by **28 May 2026**. Alternatively, Woodside is willing to consider and accept your feedback via a means which suits you.

Your feedback and our response will be included in our EPs. The Commonwealth EP 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). The State EP will be submitted to the Department of Mines, Petroleum and Exploration (DMPE) for acceptance in accordance with the *Petroleum (Submerged Lands) (Environment) Regulations 2012* (WA). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

You may request that particular information you provide during consultation not be published in the EP made available on the NOPSEMA website. Please let us know if you request that particular information not be published, and we will make your request known to NOPSEMA.

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 Feedback

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6.1.21 Email sent to Western Australian Fishing Industry Council (WAFIC) – 28 April 2026

Dear WAFIC

Please see below consultation information for the Browse to North West Shelf (NWS) Project Geophysical and Geotechnical (GPGT) Surveys Commonwealth and State Environment Plans (EP). The consultation period is due to close on **28 May 2026**.

Consultation Information Sheets are also attached.

Under the fee-for-service agreement Option A, can WAFIC please provide the consultation information to the following fisheries based on active fishing (Fishcube data) in the Operational Area:

- Marine Aquarium Fish Managed Fishery
- Northern Demersal Scalefish Managed Fishery

Should distribution to licence holders be delayed, we kindly request that the feedback close date be adjusted accordingly to ensure members continue to receive a full 30-day consultation period. The current close date (**28 May 2026**) appears twice in the draft email below.

Draft email for WAFIC to send to Individual Licence Holders

Dear Licence Holders

Woodside is planning to submit the Browse to North West Shelf (NWS) Project Geophysical and Geotechnical (GPGT) Surveys Commonwealth and State Environment Plans (EP).

The Operational Area for the **Browse to NWS Project GPGT Surveys (Commonwealth) EP** covers several petroleum titles in Commonwealth waters: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R, and G-8-AP. It includes:

- Operational Area A – the Torosa field, located approximately 430 km north-northwest of Broome.
- Operational Area B – the Calliance and Brecknock fields, located approximately 370 km north-northwest of Broome.

The Operational Area for the **Browse to NWS Project GPGT Surveys (State) EP** overlaps Petroleum Titles TR/5 R2, located in State waters approximately 430 km north-northwest of Broome.

If you would like to comment on the proposed activities, please contact WAFIC by **28 May 2026** using the details below.

Overview

Woodside has previously undertaken GPGT surveys in the Browse Basin as part of earlier project concepts.

A series of new GPGT surveys is proposed to support potential future activities associated with the Browse to NWS Project. These surveys will be conducted across both Commonwealth and State waters and are organised into three Environment Plans (EPs):

- Browse to NWS Project GPGT Surveys EP (Commonwealth) – the subject of this consultation
- Browse to NWS Project GPGT Surveys EP (State) – the subject of this consultation
- Browse to NWS Project Trunkline GPGT Surveys EP (Commonwealth).

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Survey data is intended to inform the design and installation of the proposed trunkline, pipelines and umbilicals, subsea structures, and the mooring systems for the two proposed floating production storage and offtake (FPSO) facilities and mobile offshore drilling units (MODUs).

Data may also contribute to assessments of existing infrastructure, support environmental and heritage studies, and assist in planning potential future project activities.

You can read more about the Browse Project on our website.

Consultation information

The table below provides a summary of the proposed activities under these EPs. The attached Consultation Information Sheets provides additional information including a map of impacted areas, summaries of potential impacts and risks relating to the proposed activities, and associated management measures, as well as our approach to consultation. This is also available on Woodside's website.

Activity and location summary

Browse to NWS Project GPGT Surveys Environment Plan (EP)		
	Commonwealth EP	**State EP**
Activity details	**Geophysical surveys within the Operational Area using:** • Multibeam echosounder (MBES), single beam echo sounder, altimeter • Side scan sonar (SSS) including variants such as multi-aperture and synthetic aperture sonar • Magnetometer / gradiometer and pipe tracker • Sub-bottom profiler (SBP), such as but not limited to boomer, sparker, pinger, chirp, and parametric SBP. **Geotechnical surveys within the Operational Area using:** • Box corer / grab sampler • Shallow cores and probes: piston core / gravity core / vibrocore • Borehole sampling / coring / in situ testing • Cone penetrometer testing (CPT/PCPT/CPTu). **Other survey equipment being used:** • Water sampler • Sound velocity sensor / multi-parameter conductivity-temperature-depth profiler • Ultra-short baseline (USBL) positioning system • Doppler velocity log and Inertial navigation system • Underwater camera • Underwater laser scanner • Remotely operated vehicle (ROV) • Autonomous underwater vehicle (AUV).	

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Titles	• Petroleum licences: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R. • Greenhouse Gas permit G-8-AP.	• Petroleum licence: TR/5 R2.
Location	In Commonwealth waters ~ 430 km north-northwest of Broome (Operational Area A) and ~ 370 km north-northwest of Broome (Operational Area B).	In State waters ~ 430 km north-northwest of Broome.
Water depth	~ 350 m - 900 m	~ 75 m - 700 m
Timing	Anticipated to commence from ~ Q3 2027.	
Duration	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-60 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 90 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-40 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 40 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.
Vessels	Multi-purpose vessels, uncrewed surface vessels, geotechnical drilling vessels and support vessels.	
Operational Area and exclusion zones	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within Commonwealth waters.	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within State waters.

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Communication with mariners	• Commercial fishers and other marine users are permitted to use the Operational Area but should take care around operations by adhering to standard navigation rules and remain clear of the safety exclusion zone. • Marine notices will be issued prior to activity commencement to alert vessels which may be operating in waters nearby.

Notifications

Please let WAFIC know if you require notification prior to and on completion of the proposed activities.

Feedback

Please provide feedback specific to the proposed activities described to **[Contact 7]** by **28 May 2026**.

Your feedback and Woodside's response will be included in Woodside's EPs. The Commonwealth EP 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). The State EP will be submitted to the Department of Mines, Petroleum and Exploration (DMPE) for acceptance in accordance with the *Petroleum (Submerged Lands) (Environment) Regulations 2012* (WA). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

You may request that particular information you provide during consultation not be published in the EP made available on the NOPSEMA website. Please let us know if you request that particular information not be published and if so, Woodside will make your request known to NOPSEMA.

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 Feedback

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6.1.22 Email sent to Marine Aquarium Fish Managed Fishery & Northern Demersal Scalefish Managed Fishery Licence Holders – 29 April 2026

Dear Licence Holders,

Woodside is planning to submit the Browse to North West Shelf (NWS) Project Geophysical and Geotechnical (GPGT) Surveys Commonwealth and State Environment Plans (EP).

The Operational Area for the **Browse to NWS Project GPGT Surveys (Commonwealth) EP** covers several petroleum titles in Commonwealth waters: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R, and G-8-AP. It includes:

· Operational Area A – the Torosa field, located approximately 430 km north-northwest of Broome.

· Operational Area B – the Calliance and Brecknock fields, located approximately 370 km north-northwest of Broome.

The Operational Area for the **Browse to NWS Project GPGT Surveys (State) EP** overlaps Petroleum Titles TR/5 R2, located in State waters approximately 430 km north-northwest of Broome.

If you would like to comment on the proposed activities, please contact WAFIC by **29 May 2026** using the details below.

Overview

Woodside has previously undertaken GPGT surveys in the Browse Basin as part of earlier project concepts.

A series of new GPGT surveys is proposed to support potential future activities associated with the Browse to NWS Project. These surveys will be conducted across both Commonwealth and State waters and are organised into three Environment Plans (EPs):

· Browse to NWS Project GPGT Surveys EP (Commonwealth) – the subject of this consultation

· Browse to NWS Project GPGT Surveys EP (State) – the subject of this consultation

· Browse to NWS Project Trunkline GPGT Surveys EP (Commonwealth).

Survey data is intended to inform the design and installation of the proposed trunkline, pipelines and umbilicals, subsea structures, and the mooring systems for the two proposed floating production storage and offtake (FPSO) facilities and mobile offshore drilling units (MODUs).

Data may also contribute to assessments of existing infrastructure, support environmental and heritage studies, and assist in planning potential future project activities.

You can read more about the Browse Project on our website.

Consultation information

The table below provides a summary of the proposed activities under these EPs. The attached Consultation Information Sheets provides additional information including a map of impacted areas, summaries of potential impacts and risks relating to the proposed activities, and associated management measures, as well as our approach to consultation. This is also available on Woodside's website.

Activity and location summary

Browse to NWS Project GPGT Surveys Environment Plan (EP)		
	Commonwealth EP	**State EP**

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Activity details	**Geophysical surveys within the Operational Area using:** · Multibeam echosounder (MBES), single beam echo sounder, altimeter · Side scan sonar (SSS) including variants such as multi-aperture and synthetic aperture sonar · Magnetometer / gradiometer and pipe tracker · Sub-bottom profiler (SBP), such as but not limited to boomer, sparker, pinger, chirp, and parametric SBP. **Geotechnical surveys within the Operational Area using:** · Box corer / grab sampler · Shallow cores and probes: piston core / gravity core / vibrocore · Borehole sampling / coring / in situ testing · Cone penetrometer testing (CPT/PCPT/CPTu). **Other survey equipment being used:** · Water sampler · Sound velocity sensor / multi-parameter conductivity-temperature-depth profiler · Ultra-short baseline (USBL) positioning system · Doppler velocity log and Inertial navigation system · Underwater camera · Underwater laser scanner · Remotely operated vehicle (ROV) · Autonomous underwater vehicle (AUV).	
Titles	· Petroleum licences: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R. · Greenhouse Gas permit G-8-AP.	· Petroleum licence: TR/5 R2.
Location	In Commonwealth waters ~ 430 km north-northwest of Broome (Operational Area A) and ~ 370 km north-northwest of Broome (Operational Area B).	In State waters ~ 430 km north-northwest of Broome.
Water depth	~ 350 m - 900 m	~ 75 m - 700 m
Timing	Anticipated to commence from ~ Q3 2027.	

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Duration	· Surveys anticipated to be completed over several multi-week campaigns (typically 20-60 days in duration) split over the five-year duration of the EP. · Estimated to take up to a maximum of 90 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. · Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.	· Surveys anticipated to be completed over several multi-week campaigns (typically 20-40 days in duration) split over the five-year duration of the EP. · Estimated to take up to a maximum of 40 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. · Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.
Vessels	Multi-purpose vessels, uncrewed surface vessels, geotechnical drilling vessels and support vessels.	
Operational Area and exclusion zones	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: · Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: · The exact location of the proposed surveys within the Operational Area may vary. · Operational Area is within Commonwealth waters.	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: · Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: · The exact location of the proposed surveys within the Operational Area may vary. · Operational Area is within State waters.
Communication with mariners	· Commercial fishers and other marine users are permitted to use the Operational Area but should take care around operations by adhering to standard navigation rules and remain clear of the safety exclusion zone. · Marine notices will be issued prior to activity commencement to alert vessels which may be operating in waters nearby.	

Notifications

Please let WAFIC know if you require notification prior to and on completion of the proposed activities.

Feedback

Please provide feedback specific to the proposed activities described to **[Contact 7]** by **29 May 2026**.

Your feedback and Woodside's response will be included in Woodside's EPs. The Commonwealth EP 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). The State EP will be submitted to the Department of Mines, Petroleum and Exploration (DMPE) for acceptance in accordance with the *Petroleum (Submerged Lands) (Environment) Regulations 2012* (WA). 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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6.1.23 Email sent to Department of Biodiversity, Conservation and Attractions (DBCA) – 28 April 2026

Woodside is planning to submit the Browse to North West Shelf (NWS) Project Geophysical and Geotechnical (GPGT) Surveys Commonwealth and State Environment Plans (EP).

The Operational Area for the **Browse to NWS Project GPGT Surveys (Commonwealth) EP** covers several petroleum titles in Commonwealth waters: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R, and G-8-AP. It includes:

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- Operational Area B – the Calliance and Brecknock fields, located approximately 370 km north-northwest of Broome.

The Operational Area for the **Browse to NWS Project GPGT Surveys (State) EP** overlaps Petroleum Titles TR/5 R2, located in State waters approximately 430 km north-northwest of Broome.

If you would like to comment on the proposed activities, please provide feedback to Woodside by **28 May 2026** using the details below.

Overview

Woodside has previously undertaken GPGT surveys in the Browse Basin as part of earlier project concepts.

A series of new GPGT surveys is proposed to support potential future activities associated with the Browse to NWS Project. These surveys will be conducted across both Commonwealth and State waters and are organised into three Environment Plans (EPs):

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- Browse to NWS Project GPGT Surveys EP (State) – the subject of this consultation
- Browse to NWS Project Trunkline GPGT Surveys EP (Commonwealth).

Survey data is intended to inform the design and installation of the proposed trunkline, pipelines and umbilicals, subsea structures, and the mooring systems for the two proposed floating production storage and offtake (FPSO) facilities and mobile offshore drilling units (MODUs).

Data may also contribute to assessments of existing infrastructure, support environmental and heritage studies, and assist in planning potential future project activities.

You can read more about the Browse Project on our website.

Consultation information

Consultation Information Sheets are attached, which provide additional background on our approach to consultation, and on the proposed activities including summaries of potential key impacts and risks and associated management measures. These are also available on our website.

Activity and location summary

Browse to NWS Project GPGT Surveys Environment Plan (EP)		
	Commonwealth EP	**State EP**

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<table>
<tr><td>Activity details</td><td colspan="2">Geophysical surveys within the Operational Area using:
Multibeam echosounder (MBES), single beam echo sounder, altimeter
Side scan sonar (SSS) including variants such as multi-aperture and synthetic aperture sonar
Magnetometer / gradiometer and pipe tracker
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Geotechnical surveys within the Operational Area using:
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Shallow cores and probes: piston core / gravity core / vibrocore
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Water sampler
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Doppler velocity log and Inertial navigation system
Underwater camera
Underwater laser scanner
Remotely operated vehicle (ROV)
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Duration	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-60 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 90 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-40 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 40 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.
Vessels	Multi-purpose vessels, uncrewed surface vessels, geotechnical drilling vessels and support vessels.	
Operational Area and exclusion zones	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within Commonwealth waters.	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within State waters.
Communication with mariners	• Commercial fishers and other marine users are permitted to use the Operational Area but should take care around operations by adhering to standard navigation rules and remain clear of the safety exclusion zone. • Marine notices will be issued prior to activity commencement to alert vessels which may be operating in waters nearby.	

Environment that May Be Affected (EMBA)

The EMBA is the largest geographic area where an unplanned event could potentially have an environmental consequence. The broadest extent of the EMBA takes into consideration planned activities and unplanned events. The EMBA has been developed combining numerous modelling outputs based on highly unlikely releases of hydrocarbons to the environment. The modelling scenarios that inform the EMBA are for a vessel collision.

The EMBA does not represent the extent of the predicted impact of a highly unlikely hydrocarbon release. Rather, the EMBA represents the merged area of many possible paths that a highly unlikely hydrocarbon release could travel, which depends on the weather and ocean conditions at the time of a release. This

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means that in the highly unlikely event that a hydrocarbon release does occur, the whole EMBA would not be affected. The specific and minimal part of the EMBA that is affected will only be known if there is a release.

Areas of ecological importance

Woodside affirms that areas of ecological importance in the Operational Area will not be impacted by planned activities.

Woodside maintains knowledge and an understanding of areas of ecological importance within and adjacent to the Operational Area. An information system to track current existing environment knowledge is regularly updated and covers the following topics:

- EPBC Act Matters of National Ecological Significance (MNES) including threatened and migratory listed species
- WA Biodiversity Conservation Act 2016 – threatened and priority fauna list, the Part 13 Instruments, i.e., threatened species recovery plans and Biodiversity Regulations 2018
- EPBC Act threatened Species, Recovery Plans and Conservation advice
- State protected areas information and management plans on the habitats and associated fish and benthic communities.

The sources of information include credible published scientific research, industry and research agencies (government and university) study reports including baseline and monitoring programs. Woodside is also committed to sharing knowledge and contributes to the Index of Marine Surveys for Assessment (IMSA) hosted by the Department of Water and Environmental Regulation (WA) and supported by WAMSI.

National Light Pollution Guidelines

The lighting associated with the Browse to NWS Project GPGT Surveys EPs activity vessels is required as a priority for safe operation. Woodside has considered the Commonwealth Department of Climate Change, Energy, the Environment and Water's National Light Pollution Guidelines for Wildlife (NLPG; Commonwealth of Australia 2023) with respect to vessel activities. The assessment of potential impacts to seabird and turtle behaviour, is based on recommendations in the NLPG. This impact assessment determined that the impacts of lighting are as low as reasonably practicable (ALARP).

Operational and Scientific Monitoring Program

Woodside's oil spill Operational and Scientific Monitoring (OSM) Program, executed under the Joint Industry OSM Framework (AEP, 2021), provides for a quantitative assessment of the overall environmental impacts in the event of an unplanned hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors including but not limited to the Ningaloo Marine Park (M 2), Montebello Islands Marine Park (M 9) and the Barrow Island Nature Reserve (R 11648). The OSM comprises ten scientific monitoring programs (SMPs) and six operational monitoring programs (OMPs). The SMPs are targeted environmental monitoring programs to assess and quantify the environmental impact of a hydrocarbon spill range of physical-chemical (water and sediment) and biological (species and habitats) receptors, including EPBC Act listed species, environmental values associated with protected areas and socio-economic values, such as fisheries. The ten SMPs address a range of receptors most vulnerable to the impacts of a hydrocarbon release. The actual design and execution of the OSM program will be dependent on the nature and scale of the spill and the receptors predicted to be impacted. One of the priority focus areas in the early phase of an incident would be to identify and execute OSM at First Strike Monitoring Priorities.

Incidents and emergency response

Woodside's Oil Pollution First Strike Plan for this activity includes a commitment that the DBCA will be notified via phone call as soon as practicable if there is potential for oiled wildlife or the spill is expected to contact land or waters managed by WA DBCA. Woodside has incorporated the DBCA Pilbara regional office phone number as part of the notifications as listed in the Oil Pollution First Strike Plan.

This plan describes the incident management structure, notification and reporting requirements, the Operational Area, activity specific credible spill scenarios, and the hydrocarbon spill response strategies

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available for the protection of priority receptors. Links are included in the plan to a suite of existing Operational Plans and Tactical Response Plans (TRPs) to commence the mobilisation of response resources immediately, including 'monitor and evaluate' services, operational and scientific monitoring, and shoreline clean-up where required. Woodside understands that DBCA will not implement an oiled wildlife management response on behalf of a petroleum operator.

Feedback

If you have feedback specific to the proposed activities, we welcome your feedback via email at feedback@woodside.com, via phone call at 1800 442 977 or via the feedback form on our website by **28 May 2026**. Alternatively, Woodside is willing to consider and accept your feedback via a means which suits you.

Your feedback and our response will be included in our EPs. The Commonwealth EP 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). The State EP will be submitted to the Department of Mines, Petroleum and Exploration (DMPE) for acceptance in accordance with the *Petroleum (Submerged Lands) (Environment) Regulations 2012* (WA). 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 Feedback

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6.1.24 Email sent to Bardi and Jawi Niimidiman Aboriginal Corporation (BJNAC) – 28 April 2026

We are contacting you as the delegated representative for Bardi and Jawi Niimidiman Aboriginal Corporation (BJNAC).

Woodside would like to consult with BJNAC about two Environment Plans (EPs):

- Browse to NWS Project Geophysical and Geotechnical Surveys EP (Commonwealth)
- Browse to NWS Project Geophysical and Geotechnical Surveys EP (State).

The EPs relate to geophysical and geotechnical survey activities involving seafloor sampling and scanning, and survey vessel operations in both Commonwealth and State waters.

Consultation for both EPs opens on 28 April 2026 and closes on 28 May 2026.The purpose of Woodside's consultation with BJNAC is to understand how the activities in the EPs could potentially impact the group's cultural values, interests and activities.

Woodside in the course of developing the EPs, will assess feedback, opinions and comments provided by the consultation closing date, and where relevant, consider appropriate control measures to include in the EPs.

The purpose of this email is to:

- Inform you about our plans for these activities.
- Invite you to submit feedback for these activities.
- Provide an opportunity to discuss these activities.
- Discuss further ways to consult and engage for these activities.

The Browse to North West Shelf (NWS) Project
Woodside and its Joint Venture partners are proposing to deliver natural gas from the Torosa, Calliance and Brecknock gas fields, located approximately 425 km north of Broome in the offshore Browse Basin, to the existing Karratha Gas Plant. The gas would be transported via an approximately 900 km trunkline connected to two floating production storage and offtake (FPSO) facilities.

Consultation with Woodside
The attached Summary Consultation Information Sheets have been developed for an Indigenous audience and provide a high-level overview of the activities including the Environment that May Be Affected (EMBA) (Commonwealth EP) and the Operational Area (Commonwealth and State EP). We have also linked the more detailed Consultation Information Sheets here with further information including an assessment of the potential impacts and risks relevant to the activities, as well as mitigation and management measures.
Your consultation correspondence with us about the Commonwealth EP, along with any appropriate control measures included in the EP are considered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), when we submit the EP for assessment.
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 by phoning (08) 6188 8700 or via email at 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)

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- Policy: Draft policy for managing gender-restricted information PL2098.pdf (nopsema.gov.au)

Your feedback, opinions and comments about the state EP will be reflected in the EPs and considered by the Department of Mines, Petroleum and Exploration (DMPE).

Your Feedback
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 activities
- Other elements we should consider in the Environment Plans
- Any other individuals, groups, or organisations we should talk to about these activities

Underwater Cultural Heritage Study
We've recently completed a desktop study on the Underwater Cultural Heritage of the proposed Browse to NWS Project activity area and have attached an information sheet for your review. We'd like to hear from Traditional Owners and Custodians about their cultural values, stories and traditional knowledge of this proposed activity area to build on what we've found. To provide feedback and learn more about the study please contact us at IndigenousAffairs@woodside.com.

Consultation preferences
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. If you would like us to meet with you as part of Woodside's consultation on this activity, please contact me to discuss and confirm details.

How to contact us and further information
Information can be sent to IndigenousAffairs@woodside.com, via telephone on 1800 442 977 or directly to me.

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. 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 documents to members of BJNAC and other people and organisations who may be interested.

I look forward to your response and please feel free to call or provide guidance on next steps.

Kind regards

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6.1.25 Email sent to Boorroola Moorrool Moorrool via legal representative – 10 August 2026

We are contacting you as the representative for the Boorroola Moorrool Moorrool Native Title Claim (WC2016/005). We ask that you please provide the following information to the Boorroola Moorrool Moorrool claim group (BMM).

Woodside would like to consult with BMM about the Browse to NWS Project Geophysical and Geotechnical Surveys Environment Plan (Commonwealth).

This Environment Plan (EP) relates to geophysical and geotechnical survey activities involving seafloor sampling and scanning, and survey vessel operations in Commonwealth waters.

The purpose of Woodside's consultation with BMM is to understand how the activities in the EP could potentially impact the group's cultural values, interests and activities.

All feedback provided by BMM before 10 September 2026 will be reflected in our EP submission and considered by the Commonwealth regulator, National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

Woodside in the course of developing the EP, will assess feedback, opinions and comments provided by the consultation closing date, and where relevant, consider appropriate control measures to include in the EPs.

The purpose of this email is to:

- Inform you about our plans for this activity.
- Invite you to submit feedback for this activity.
- Provide an opportunity to discuss this activity.
- Discuss further ways to consult and engage for this activity.

The Browse to North West Shelf (NWS) Project

Woodside and its Joint Venture partners are proposing to deliver natural gas

from the Torosa, Calliance and Brecknock gas fields, located approximately 425 km north of Broome in the offshore Browse Basin, to the existing Karratha Gas Plant. The gas would be transported via an approximately 900 km trunkline connected to two floating production storage and offtake (FPSO) facilities.

Consultation with Woodside

The attached Summary Consultation Information Sheet has been developed for an Indigenous audience and provides a high-level overview of the EP including the Environment that May Be Affected (EMBA). We have also linked the more detailed Consultation Information Sheet here with further information including an assessment of the potential impacts and risks relevant to the activities, as well as mitigation and management measures.

Your consultation correspondence with us, along with any appropriate control measures included in the EP will be considered by NOPSEMA, when we submit the EP for assessment.

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 by phoning (08) 6188 8700 or via email at communications@nopsema.gov.au.

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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: Managing gender-restricted information PL2098.pdf (nopsema.gov.au)

Your Feedback

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 Plans
- Any other individuals, groups, or organisations we should talk to about this activity.

Underwater Cultural Heritage Study

We've recently completed a desktop study on the Underwater Cultural Heritage of the proposed Browse to NWS Project activity area and have attached an information sheet for your review. We'd like to hear from Traditional Owners and Custodians about their cultural values, stories and traditional knowledge of this proposed activity area to build on what we've found. To provide feedback and learn more about the study please contact us at IndigenousAffairs@woodside.com.

Consultation preferences

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. If you would like us to meet with you as part of Woodside's consultation on this activity, please contact me to discuss and confirm details.

How to contact us and further information

Information can be sent to IndigenousAffairs@woodside.com, via telephone on 1800 442 977 or directly to me.

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. 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.

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Please feel free to forward this email and the attached documents to members of BMM and other people and organisations who may be interested.

I look forward to your response and please feel free to call or provide guidance on next steps.

6.1.26 Email sent to Dambimangari Aboriginal Corporation (DAC) – 28 April 2026

Dear Dambimangari Aboriginal Corporation (DAC),

Woodside would like to consult with DAC about two Environment Plans (EPs):

- Browse to NWS Project Geophysical and Geotechnical Surveys EP (Commonwealth)
- Browse to NWS Project Geophysical and Geotechnical Surveys EP (State).

The EPs relate to geophysical and geotechnical survey activities involving seafloor sampling and scanning, and survey vessel operations in both Commonwealth and State waters.
Consultation for both EPs opens on 28 April 2026 and closes on 28 May 2026.

The purpose of Woodside's consultation with DAC is to understand how the activities in the EPs could potentially impact the group's cultural values, interests and activities.

Woodside in the course of developing the EPs, will assess feedback, opinions and comments provided by the consultation closing date, and where relevant, consider appropriate control measures to include in the EPs.

The purpose of this email is to:

- Inform you about our plans for these activities
- Invite you to submit feedback for these activities.
- Provide an opportunity to discuss these activities.
- Discuss further ways to consult and engage for these activities.

The Browse to North West Shelf (NWS) Project
Woodside and its Joint Venture partners are proposing to deliver natural gas
from the Torosa, Calliance and Brecknock gas fields, located approximately 425 km north of Broome in the offshore Browse Basin, to the existing Karratha Gas Plant. The gas would be transported via an approximately 900 km trunkline connected to two floating production storage and offtake (FPSO) facilities.

Consultation with Woodside
The attached Summary Consultation Information Sheets have been developed for an Indigenous audience and provide a high-level overview of the activities including the Environment that May Be Affected (EMBA) (Commonwealth EP) and the Operational Area (Commonwealth and State EP). We have also linked the more detailed Consultation Information Sheets here with further information including an assessment of the potential impacts and risks relevant to the activities, as well as mitigation and management measures.

Your consultation correspondence with us about the Commonwealth EP, along with any appropriate control measures included in the EP are considered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), when we submit the EP for assessment.

Woodside manages gender-restricted or other culturally sensitive information carefully and will work with you

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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 by phoning (08) 6188 8700 or via email at 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)

Your feedback, opinions, and comments about the state EP will be reflected in the EP and considered by the Department of Mines, Petroleum and Exploration (DMPE).

Your Feedback
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 activities
- Other elements we should consider in the Environment Plans

Any other individuals, groups, or organisations we should talk to about these activities

Underwater Cultural Heritage Study
We've recently completed a desktop study on the Underwater Cultural Heritage of the proposed Browse to NWS Project activity area and have attached an information sheet for your review. We'd like to hear from Traditional Owners and Custodians about their cultural values, stories, and traditional knowledge of this proposed activity area to build on what we've found. To provide feedback and learn more about the study please contact us at IndigenousAffairs@woodside.com.

Consultation preferences
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. If you would like us to meet with you as part of Woodside's consultation on this activity, please contact me to discuss and confirm details.

How to contact us and further information

Information can be sent to IndigenousAffairs@woodside.com, via telephone on 1800 442 977 or directly to me.

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. 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.

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Please feel free to forward this email and the attached documents to members of DAC and other people and organisations who may be interested.

I look forward to your response and please feel free to call or provide guidance on next steps.

6.1.27 Email sent to Gogolanyngor Aboriginal Corporation (GAC) – 29 April 2026

Woodside would like to consult with Gogolanyngor Aboriginal Corporation (GAC) about two Environment Plans (EPs):

- Browse to NWS Project Geophysical and Geotechnical Surveys EP (Commonwealth)
- Browse to NWS Project Geophysical and Geotechnical Surveys EP (State).

The EPs relate to geophysical and geotechnical survey activities involving seafloor sampling and scanning, and survey vessel operations in both Commonwealth and State waters.

Consultation for both EPs opens on 28 April 2026 and closes on 28 May 2026.

The purpose of Woodside's consultation with GAC is to understand how the activities in the EPs could potentially impact the group's cultural values, interests and activities.

Woodside in the course of developing the EPs, will assess feedback, opinions and comments provided by the consultation closing date, and where relevant, consider appropriate control measures to include in the EPs.

The purpose of this email is to:

- Inform you about our plans for these activities.
- Invite you to submit feedback for these activities.
- Provide an opportunity to discuss these activities.
- Discuss further ways to consult and engage for these activities.

The Browse to North West Shelf (NWS) Project
Woodside and its Joint Venture partners are proposing to deliver natural gas from the Torosa, Calliance and Brecknock gas fields, located approximately 425 km north of Broome in the offshore Browse Basin, to the existing Karratha Gas Plant. The gas would be transported via an approximately 900 km trunkline connected to two floating production storage and offtake (FPSO) facilities.

Consultation with Woodside
The attached Summary Consultation Information Sheets have been developed for an Indigenous audience and provide a high-level overview of the activities including the Environment that May Be Affected (EMBA) (Commonwealth EP) and the Operational Area (Commonwealth and State EP). We have also linked the more detailed Consultation Information Sheets here with further information including an assessment of the potential impacts and risks relevant to the activities, as well as mitigation and management measures.

Your consultation correspondence with us about the Commonwealth EP, along with any appropriate control measures included in the EP are considered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), when we submit the EP for assessment.

Woodside manages gender-restricted or other culturally sensitive information carefully and will work with you

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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 by phoning (08) 6188 8700 or via email at communications@nopsema.gov.au.
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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: Managing gender-restricted information PL2098.pdf (nopsema.gov.au)

Your feedback, opinions, and comments about the State EP will be reflected in the EP and considered by the Department of Mines, Petroleum and Exploration (DMPE).

Your Feedback
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 activities
- Other elements we should consider in the Environment Plans
- Any other individuals, groups, or organisations we should talk to about these activities

Underwater Cultural Heritage Study
We've recently completed a desktop study on the Underwater Cultural Heritage of the proposed Browse to NWS Project activity area and have attached an information sheet for your review. We'd like to hear from Traditional Owners and Custodians about their cultural values, stories and traditional knowledge of this proposed activity area to build on what we've found. To provide feedback and learn more about the study please contact us at IndigenousAffairs@woodside.com.

Consultation preferences
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. If you would like us to meet with you as part of Woodside's consultation on this activity, please contact me to discuss and confirm details.

How to contact us and further information
Information can be sent to IndigenousAffairs@woodside.com, via telephone on 1800 442 977 or directly to me.

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. 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 documents to members of GAC and other people and organisations who may be interested.

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I look forward to your response and please feel free to call or provide guidance on next steps.

6.1.28 Email sent to Indigenous Salt Water Advisory Group (ISWAG) – 29 April 2026

Woodside would like to consult with the Indigenous Salt Water Advisory Group (ISWAG) about two Environment Plans (EPs):

- Browse to NWS Project Geophysical and Geotechnical Surveys EP (Commonwealth)
- Browse to NWS Project Geophysical and Geotechnical Surveys EP (State).

The EPs relate to geophysical and geotechnical survey activities involving seafloor sampling and scanning, and survey vessel operations in both Commonwealth and State waters.

Consultation for both EPs opens on 28 April 2026 and closes on 28 May 2026.

The purpose of Woodside's consultation with ISWAG is to understand how the activities in the EPs could potentially impact the group's cultural values, interests and activities.
Woodside in the course of developing the EPs, will assess feedback, opinions and comments provided by the consultation closing date, and where relevant, consider appropriate control measures to include in the EPs.

The purpose of this email is to:

- Inform you about our plans for these activities.
- Invite you to submit feedback for these activities.
- Provide an opportunity to discuss these activities.
- Discuss further ways to consult and engage for these activities.

The Browse to North West Shelf (NWS) Project
Woodside and its Joint Venture partners are proposing to deliver natural gas from the Torosa, Calliance and Brecknock gas fields, located approximately 425 km north of Broome in the offshore Browse Basin, to the existing Karratha Gas Plant. The gas would be transported via an approximately 900 km trunkline connected to two floating production storage and offtake (FPSO) facilities.

Consultation with Woodside
The attached Summary Consultation Information Sheets have been developed for an Indigenous audience and provide a high-level overview of the activities including the Environment that May Be Affected (EMBA) (Commonwealth EP) and the Operational Area (Commonwealth and State EP). We have also linked the more detailed Consultation Information Sheets here with further information including an assessment of the potential impacts and risks relevant to the activities, as well as mitigation and management measures.

Your consultation correspondence with us about the Commonwealth EP, along with any appropriate control measures included in the EP are considered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), when we submit the EP for assessment.

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 by phoning (08) 6188 8700 or via email at communications@nopsema.gov.au.

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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: Managing gender-restricted information PL2098.pdf (nopsema.gov.au)

Your feedback, opinions and comments about the state EP will be reflected in the EPs and considered by the Department of Mines, Petroleum and Exploration (DMPE).

Your Feedback
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 activities
- Other elements we should consider in the Environment Plans
- Any other individuals, groups, or organisations we should talk to about these activities

Underwater Cultural Heritage Study
We've recently completed a desktop study on the Underwater Cultural Heritage of the proposed Browse to NWS Project activity area and have attached an information sheet for your review. We'd like to hear from Traditional Owners and Custodians about their cultural values, stories and traditional knowledge of this proposed activity area to build on what we've found. To provide feedback and learn more about the study please contact us at IndigenousAffairs@woodside.com.

Consultation preferences
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. If you would like us to meet with you as part of Woodside's consultation on this activity, please contact me to discuss and confirm details.

How to contact us and further information
Information can be sent to IndigenousAffairs@woodside.com, via telephone on 1800 442 977 or directly to me.

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. 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 documents to members of ISWAG and other people and organisations who may be interested.

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I look forward to your response and please feel free to call or provide guidance on next steps.

6.1.29 Email sent to Kimberley Land Council (KLC) – 28 April 2026

We are contacting you as the delegated representative for the Kimberley Land Council (KLC).

Woodside would like to consult with KLC about three Environment Plans (EPs):

- Browse to NWS Project Trunkline Geophysical and Geotechnical Surveys EP
- Browse to NWS Project Geophysical and Geotechnical Surveys EP (Commonwealth)
- Browse to NWS Project Geophysical and Geotechnical Surveys EP (State).

The EPs relate to geophysical and geotechnical survey activities involving seafloor sampling and scanning, and survey vessel operations in both Commonwealth and State waters.

Consultation for the three EPs opens on 28 April 2026 and closes on 28 May 2026.

The purpose of Woodside's consultation with KLC is to understand how the activities in the EPs could potentially impact the groups' cultural values, interests and activities.

Woodside in the course of developing the EPs, will assess feedback, opinions and comments provided by the consultation closing date, and where relevant, consider appropriate control measures to include in the EPs.

The purpose of this email is to:

- Inform you about our plans for these activities.
- Invite you to submit feedback for these activities.
- Provide an opportunity to discuss these activities.
- Discuss further ways to consult and engage for these activities.

The Browse to North West Shelf (NWS) Project
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Consultation with Woodside
The attached Summary Consultation Information Sheets have been developed for an Indigenous audience and provide a high-level overview of the activities including the Environment that May Be Affected (EMBA) (Commonwealth EPs) and the Operational Area (Commonwealth and State EPs).We have also linked the more detailed Consultation Information Sheets here with further information including an assessment of the potential impacts and risks relevant to the activities, as well as mitigation and management measures.
Your consultation correspondence with us about the Commonwealth EPs, along with any appropriate control measures included in the EPs are considered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), when we submit the EPs for assessment.
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 by phoning (08) 6188 8700 or via email at communications@nopsema.gov.au.

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- Policy: Draft policy for managing gender-restricted information PL2098.pdf (nopsema.gov.au)

Your feedback, opinions and comments about the state EP will be reflected in the EP and considered by the Department of Mines, Petroleum and Exploration (DMPE).

Your Feedback

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 these Environment Plans
- Any other individuals, groups, or organisations we should talk to about these activities

Underwater Cultural Heritage Study

We've recently completed a desktop study on the Underwater Cultural Heritage of the proposed Browse to NWS Project activity area and have attached an information sheet for your review. We'd like to hear from Traditional Owners and Custodians about their cultural values, stories and traditional knowledge of this proposed activity area to build on what we've found. To provide feedback and learn more about the study please contact us at IndigenousAffairs@woodside.com.

Consultation preferences

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. If you would like us to meet with you as part of Woodside's consultation on this activity, please contact me to discuss and confirm details.

How to contact us and further information

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Ongoing Feedback

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Please feel free to forward this email and the attached documents to members of KLC and other people and organisations who may be interested.

I look forward to your response and please feel free to call or provide guidance on next steps.

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6.1.30 Email sent to La-Djardar Bay Aboriginal Corporation (La-Djardar Bay) – 29 April 2026

Woodside would like to consult with La-Djardar Bay Aboriginal Corporation (La-Djardar Bay) about two Environment Plans (EPs):

- Browse to NWS Project Geophysical and Geotechnical Surveys EP (Commonwealth)
- Browse to NWS Project Geophysical and Geotechnical Surveys EP (State).

The EPs relate to geophysical and geotechnical survey activities involving seafloor sampling and scanning, and survey vessel operations in both Commonwealth and State waters.

Consultation for both EPs opens on 28 April 2026 and closes on 28 May 2026.

The purpose of Woodside's consultation with La-Djardar Bay is to understand how the activities in the EPs could potentially impact the group's cultural values, interests and activities.
Woodside in the course of developing the EPs, will assess feedback, opinions and comments provided by the consultation closing date, and where relevant, consider appropriate control measures to include in the EPs.

The purpose of this email is to:

- Inform you about our plans for these activities.
- Invite you to submit feedback for these activities.
- Provide an opportunity to discuss these activities.
- Discuss further ways to consult and engage for these activities.

The Browse to North West Shelf (NWS) Project
Woodside and its Joint Venture partners are proposing to deliver natural gas from the Torosa, Calliance and Brecknock gas fields, located approximately 425 km north of Broome in the offshore Browse Basin, to the existing Karratha Gas Plant. The gas would be transported via an approximately 900 km trunkline connected to two floating production storage and offtake (FPSO) facilities.

Consultation with Woodside
The attached Summary Consultation Information Sheets have been developed for an Indigenous audience and provide a high-level overview of the activities including the Environment that May Be Affected (EMBA) (Commonwealth EP) and the Operational Area (Commonwealth and State EP). We have also linked the more detailed Consultation Information Sheets here with further information including an assessment of the potential impacts and risks relevant to the activities, as well as mitigation and management measures.

Your consultation correspondence with us about the Commonwealth EP, along with any appropriate control measures included in the EP are considered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), when we submit the EP for assessment.

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 by phoning (08) 6188 8700 or via email at 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:

This document is protected by copyright. No part of this document may be reproduced, adapted, transmitted, or stored in any form by any process (electronic or otherwise) without the specific written consent of Woodside. All rights are reserved.

- 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: Managing gender-restricted information PL2098.pdf (nopsema.gov.au)

Your feedback, opinions and comments about the state EP will be reflected in the EPs and considered by the Department of Mines, Petroleum and Exploration (DMPE).

Your Feedback
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 activities
- Other elements we should consider in the Environment Plans
- Any other individuals, groups, or organisations we should talk to about these activities

Underwater Cultural Heritage Study
We've recently completed a desktop study on the Underwater Cultural Heritage of the proposed Browse to NWS Project activity area and have attached an information sheet for your review. We'd like to hear from Traditional Owners and Custodians about their cultural values, stories and traditional knowledge of this proposed activity area to build on what we've found. To provide feedback and learn more about the study please contact us at IndigenousAffairs@woodside.com.

Consultation preferences
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. If you would like us to meet with you as part of Woodside's consultation on this activity, please contact me to discuss and confirm details.

How to contact us and further information
Information can be sent to IndigenousAffairs@woodside.com, via telephone on 1800 442 977 or directly to me.

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. 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 documents to members of La-Djarda Bay and other people and organisations who may be interested.

I look forward to your response and please feel free to call or provide guidance on next steps.

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6.1.31 Email sent to Lombadina Aboriginal Corporation (Lombadina) – 29 April 2026

Woodside would like to consult with Lombadina Aboriginal Corporation (Lombadina) about two Environment Plans (EPs):

- Browse to NWS Project Geophysical and Geotechnical Surveys EP (Commonwealth)
- Browse to NWS Project Geophysical and Geotechnical Surveys EP (State).

The EPs relate to geophysical and geotechnical survey activities involving seafloor sampling and scanning, and survey vessel operations in both Commonwealth and State waters.
Consultation for both EPs opens on 28 April 2026 and closes on 28 May 2026.

The purpose of Woodside's consultation with Lombadina is to understand how the activities in the EPs could potentially impact the group's cultural values, interests and activities.
Woodside in the course of developing the EPs, will assess feedback, opinions and comments provided by the consultation closing date, and where relevant, consider appropriate control measures to include in the EPs.

The purpose of this email is to:

- Inform you about our plans for these activities.
- Invite you to submit feedback for these activities.
- Provide an opportunity to discuss these activities.
- Discuss further ways to consult and engage for these activities.

The Browse to North West Shelf (NWS) Project
Woodside and its Joint Venture partners are proposing to deliver natural gas from the Torosa, Calliance and Brecknock gas fields, located approximately 425 km north of Broome in the offshore Browse Basin, to the existing Karratha Gas Plant. The gas would be transported via an approximately 900 km trunkline connected to two floating production storage and offtake (FPSO) facilities.

Consultation with Woodside
The attached Summary Consultation Information Sheets have been developed for an Indigenous audience and provide a high-level overview of the activities including the Environment that May Be Affected (EMBA) (Commonwealth EP) and the Operational Area (Commonwealth and State EP). We have also linked the more detailed Consultation Information Sheets here with further information including an assessment of the potential impacts and risks relevant to the activities, as well as mitigation and management measures.

Your consultation correspondence with us about the Commonwealth EP, along with any appropriate control measures included in the EP are considered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), when we submit the EP for assessment.

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 by phoning (08) 6188 8700 or via email at 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)

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- Policy: Managing gender-restricted information PL2098.pdf (nopsema.gov.au)

Your feedback, opinions and comments about the state EP will be reflected in the EPs and considered by the Department of Mines, Petroleum and Exploration (DMPE).

Your Feedback
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 activities
- Other elements we should consider in the Environment Plans
- Any other individuals, groups, or organisations we should talk to about these activities

Underwater Cultural Heritage Study
We've recently completed a desktop study on the Underwater Cultural Heritage of the proposed Browse to NWS Project activity area and have attached an information sheet for your review. We'd like to hear from Traditional Owners and Custodians about their cultural values, stories and traditional knowledge of this proposed activity area to build on what we've found. To provide feedback and learn more about the study please contact us at IndigenousAffairs@woodside.com.

Consultation preferences
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. If you would like us to meet with you as part of Woodside's consultation on this activity, please contact me to discuss and confirm details.

How to contact us and further information
Information can be sent to IndigenousAffairs@woodside.com, via telephone on 1800 442 977 or directly to me.

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. 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 documents to members of Lombadina and other people and organisations who may be interested.

I look forward to your response and please feel free to call or provide guidance on next steps.

6.1.32 Email sent to Mayala Inninalang Aboriginal Corporation (MIAC) via KLC – 28 April 2026

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We are contacting you as the delegated representative for Mayala Inninalang Aboriginal Corporation (MIAC).

Woodside would like to consult with Mayala Inninalang Aboriginal Corporation (MIAC) about two Environment Plans (EPs):

- Browse to NWS Project Geophysical and Geotechnical Surveys EP (Commonwealth)
- Browse to NWS Project Geophysical and Geotechnical Surveys EP (State).

The EPs relate to geophysical and geotechnical survey activities involving seafloor sampling and scanning, and survey vessel operations in both Commonwealth and State waters.

Consultation for both EPs opens on 28 April 2026 and closes on 28 May 2026.

The purpose of Woodside's consultation with MIAC is to understand how the activities in the EPs could potentially impact the group's cultural values, interests and activities.

Woodside in the course of developing the EPs, will assess feedback, opinions and comments provided by the consultation closing date, and where relevant, consider appropriate control measures to include in the EPs.

The purpose of this email is to:

- Inform you about our plans for these activities.
- Invite you to submit feedback for these activities.
- Provide an opportunity to discuss these activities.
- Discuss further ways to consult and engage for these activities.

The Browse to North West Shelf (NWS) Project
Woodside and its Joint Venture partners are proposing to deliver natural gas from the Torosa, Calliance and Brecknock gas fields, located approximately 425 km north of Broome in the offshore Browse Basin, to the existing Karratha Gas Plant. The gas would be transported via an approximately 900 km trunkline connected to two floating production storage and offtake (FPSO) facilities.

Consultation with Woodside
The attached Summary Consultation Information Sheets have been developed for an Indigenous audience and provide a high-level overview of the activities including the Environment that May Be Affected (EMBA) (Commonwealth EP) and the Operational Area (Commonwealth and State EP). We have also linked the more detailed Consultation Information Sheets here with further information including an assessment of the potential impacts and risks relevant to the activities, as well as mitigation and management measures.

Your consultation correspondence with us about the Commonwealth EP, along with any appropriate control measures included in the EP are considered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), when we submit the EP for assessment.

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 by phoning (08) 6188 8700 or via email at 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)

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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)

Your feedback, opinions and comments about the state EP will be reflected in the EP and considered by the Department of Mines, Petroleum and Exploration (DMPE).

Your Feedback
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 activities
- Other elements we should consider in the Environment Plans
- Any other individuals, groups, or organisations we should talk to about these activities

Underwater Cultural Heritage Study
We've recently completed a desktop study on the Underwater Cultural Heritage of the proposed Browse to NWS Project activity area and have attached an information sheet for your review. We'd like to hear from Traditional Owners and Custodians about their cultural values, stories and traditional knowledge of this proposed activity area to build on what we've found. To provide feedback and learn more about the study please contact us at IndigenousAffairs@woodside.com.

Consultation preferences
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. If you would like us to meet with you as part of Woodside's consultation on this activity, please contact me to discuss and confirm details.

How to contact us and further information
Information can be sent to IndigenousAffairs@woodside.com, via telephone on 1800 442 977 or directly to me.

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. 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 documents to members of MIAC and other people and organisations who may be interested.
I look forward to your response and please feel free to call or provide guidance on next steps.

6.1.33 Email sent to Nimanburr Aboriginal Corporation (Nimanburr) – 29 April 2026

Woodside would like to consult with Nimanburr Aboriginal Corporation (Nimanburr) about two Environment Plans (EPs):

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- Browse to NWS Project Geophysical and Geotechnical Surveys EP (Commonwealth)
- Browse to NWS Project Geophysical and Geotechnical Surveys EP (State).

The EPs relate to geophysical and geotechnical survey activities involving seafloor sampling and scanning, and survey vessel operations in both Commonwealth and State waters.
Consultation for both EPs opens on 28 April 2026 and closes on 28 May 2026.

The purpose of Woodside's consultation with Nimanburr is to understand how the activities in the EPs could potentially impact the group's cultural values, interests and activities.
Woodside in the course of developing the EPs, will assess feedback, opinions and comments provided by the consultation closing date, and where relevant, consider appropriate control measures to include in the EPs.

The purpose of this email is to:

- Inform you about our plans for these activities.
- Invite you to submit feedback for these activities.
- Provide an opportunity to discuss these activities.
- Discuss further ways to consult and engage for these activities.

The Browse to North West Shelf (NWS) Project
Woodside and its Joint Venture partners are proposing to deliver natural gas from the Torosa, Calliance and Brecknock gas fields, located approximately 425 km north of Broome in the offshore Browse Basin, to the existing Karratha Gas Plant. The gas would be transported via an approximately 900 km trunkline connected to two floating production storage and offtake (FPSO) facilities.

Consultation with Woodside
The attached Summary Consultation Information Sheets have been developed for an Indigenous audience and provide a high-level overview of the activities including the Environment that May Be Affected (EMBA) (Commonwealth EP) and the Operational Area (Commonwealth and State EP). We have also linked the more detailed Consultation Information Sheets here with further information including an assessment of the potential impacts and risks relevant to the activities, as well as mitigation and management measures.
Your consultation correspondence with us about the Commonwealth EP, along with any appropriate control measures included in the EP are considered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), when we submit the EP for assessment.

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 by phoning (08) 6188 8700 or via email at 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: Managing gender-restricted information PL2098.pdf (nopsema.gov.au)

Your feedback, opinions and comments about the state EP will be reflected in the EPs and considered by the Department of Mines, Petroleum and Exploration (DMPE).

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Your Feedback
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 activities
- Other elements we should consider in the Environment Plans
- Any other individuals, groups, or organisations we should talk to about these activities

Underwater Cultural Heritage Study
We've recently completed a desktop study on the Underwater Cultural Heritage of the proposed Browse to NWS Project activity area and have attached an information sheet for your review. We'd like to hear from Traditional Owners and Custodians about their cultural values, stories and traditional knowledge of this proposed activity area to build on what we've found. To provide feedback and learn more about the study please contact us at IndigenousAffairs@woodside.com.

Consultation preferences
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. If you would like us to meet with you as part of Woodside's consultation on this activity, please contact me to discuss and confirm details.

How to contact us and further information
Information can be sent to IndigenousAffairs@woodside.com, via telephone on 1800 442 977 or directly to me.

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. 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 documents to members of Nimanburr and other people and organisations who may be interested.

I look forward to your response and please feel free to call or provide guidance on next steps.

6.1.34 Email sent to Northern Land Council (NLC) – 28 April 2026

We are contacting you as the delegated representatives for the Northern Land Council (NLC).

Woodside would like to consult with NLC about two Environment Plans (EPs):

- Browse to NWS Project Geophysical and Geotechnical Surveys EP (Commonwealth)

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- Browse to NWS Project Geophysical and Geotechnical Surveys EP (State).

The EPs relate to geophysical and geotechnical survey activities involving seafloor sampling and scanning, and survey vessel operations in both Commonwealth and State waters.

Consultation for both EPs opens on 28 April 2026 and closes on 28 May 2026.

The purpose of Woodside's consultation with NLC is to understand how the activities in the EPs could potentially impact the group's cultural values, interests and activities.

Woodside in the course of developing the EPs, will assess feedback, opinions and comments provided by the consultation closing date, and where relevant, consider appropriate control measures to include in the EPs.

The purpose of this email is to:

- Inform you about our plans for these activities.
- Invite you to submit feedback for these activities.
- Provide an opportunity to discuss these activities.
- Discuss further ways to consult and engage for these activities.

The Browse to North West Shelf (NWS) Project
Woodside and its Joint Venture partners are proposing to deliver natural gas from the Torosa, Calliance and Brecknock gas fields, located approximately 425 km north of Broome in the offshore Browse Basin, to the existing Karratha Gas Plant. The gas would be transported via an approximately 900 km trunkline connected to two floating production storage and offtake (FPSO) facilities.

Consultation with Woodside
The attached Summary Consultation Information Sheets have been developed for an Indigenous audience and provide a high-level overview of the activities including the Environment that May Be Affected (EMBA) (Commonwealth EP) and the Operational Area (Commonwealth and State EP). We have also linked the more detailed Consultation Information Sheets here with further information including an assessment of the potential impacts and risks relevant to the activities, as well as mitigation and management measures.

Your consultation correspondence with us about the Commonwealth EP, along with any appropriate control measures included in the EP are considered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), when we submit the EP for assessment.

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 by phoning (08) 6188 8700 or via email at 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)

Your feedback, opinions and comments about the state EP will be reflected in the EP and considered by the Department of Mines, Petroleum and Exploration (DMPE).

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Your Feedback
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 activities
- Other elements we should consider in the Environment Plans
- Any other individuals, groups, or organisations we should talk to about these activities

Underwater Cultural Heritage Study
We've recently completed a desktop study on the Underwater Cultural Heritage of the proposed Browse to NWS Project activity area and have attached an information sheet for your review. We'd like to hear from Traditional Owners and Custodians about their cultural values, stories, and traditional knowledge of this proposed activity area to build on what we've found. To provide feedback and learn more about the study please contact us at IndigenousAffairs@woodside.com.

Consultation preferences
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. If you would like us to meet with you as part of Woodside's consultation on this activity, please contact me to discuss and confirm details.

How to contact us and further information
Information can be sent to IndigenousAffairs@woodside.com, via telephone on 1800 442 977 or directly to me.

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. 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 documents to members of NLC and other people and organisations who may be interested.

I look forward to your response and please feel free to call or provide guidance on next steps.

6.1.35 Email sent to Nyul Nyul Aboriginal Corporation (NNAC) – 29 April 2026

Woodside would like to consult with Nyul Nyul Aboriginal Corporation (NNAC) about two Environment Plans (EPs):

- Browse to NWS Project Geophysical and Geotechnical Surveys EP (Commonwealth)

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- Browse to NWS Project Geophysical and Geotechnical Surveys EP (State).

The EPs relate to geophysical and geotechnical survey activities involving seafloor sampling and scanning, and survey vessel operations in both Commonwealth and State waters.
Consultation for both EPs opens on 28 April 2026 and closes on 28 May 2026.

The purpose of Woodside's consultation with NNAC is to understand how the activities in the EPs could potentially impact the group's cultural values, interests and activities.
Woodside in the course of developing the EPs, will assess feedback, opinions and comments provided by the consultation closing date, and where relevant, consider appropriate control measures to include in the EPs.

The purpose of this email is to:

- Inform you about our plans for these activities.
- Invite you to submit feedback for these activities.
- Provide an opportunity to discuss these activities.
- Discuss further ways to consult and engage for these activities.

The Browse to North West Shelf (NWS) Project
Woodside and its Joint Venture partners are proposing to deliver natural gas from the Torosa, Calliance and Brecknock gas fields, located approximately 425 km north of Broome in the offshore Browse Basin, to the existing Karratha Gas Plant. The gas would be transported via an approximately 900 km trunkline connected to two floating production storage and offtake (FPSO) facilities.

Consultation with Woodside
The attached Summary Consultation Information Sheets have been developed for an Indigenous audience and provide a high-level overview of the activities including the Environment that May Be Affected (EMBA) (Commonwealth EP) and the Operational Area (Commonwealth and State EP). We have also linked the more detailed Consultation Information Sheets here with further information including an assessment of the potential impacts and risks relevant to the activities, as well as mitigation and management measures.

Your consultation correspondence with us about the Commonwealth EP, along with any appropriate control measures included in the EP are considered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), when we submit the EP for assessment.

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 by phoning (08) 6188 8700 or via email at 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: Managing gender-restricted information PL2098.pdf (nopsema.gov.au)

Your feedback, opinions and comments about the state EP will be reflected in the EPs and considered by the Department of Mines, Petroleum and Exploration (DMPE).

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Your Feedback
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 activities
- Other elements we should consider in the Environment Plans
- Any other individuals, groups, or organisations we should talk to about these activities

Underwater Cultural Heritage Study
We've recently completed a desktop study on the Underwater Cultural Heritage of the proposed Browse to NWS Project activity area and have attached an information sheet for your review. We'd like to hear from Traditional Owners and Custodians about their cultural values, stories and traditional knowledge of this proposed activity area to build on what we've found. To provide feedback and learn more about the study please contact us at IndigenousAffairs@woodside.com.

Consultation preferences
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. If you would like us to meet with you as part of Woodside's consultation on this activity, please contact me to discuss and confirm details.

How to contact us and further information
Information can be sent to IndigenousAffairs@woodside.com, via telephone on 1800 442 977 or directly to me.

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. 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 documents to members of NNAC and other people and organisations who may be interested.

I look forward to your response and please feel free to call or provide guidance on next steps.

6.1.36 Email sent to Walalakoo Aboriginal Corporation (WAC) – 28 April 2026

Dear Walalakoo Aboriginal Corporation (WAC),

Woodside would like to consult with WAC about two Environment Plans (EPs):

- Browse to NWS Project Geophysical and Geotechnical Surveys EP (Commonwealth)

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- Browse to NWS Project Geophysical and Geotechnical Surveys EP (State).

The EPs relate to geophysical and geotechnical survey activities involving seafloor sampling and scanning, and survey vessel operations in both Commonwealth and State waters.

Consultation for both EPs opens on 28 April 2026 and closes on 28 May 2026.

The purpose of Woodside's consultation with WAC is to understand how the activities in the EPs could potentially impact the group's cultural values, interests and activities.

Woodside in the course of developing the EPs, will assess feedback, opinions and comments provided by the consultation closing date, and where relevant, consider appropriate control measures to include in the EPs.

The purpose of this email is to:

- Inform you about our plans for these activities.
- Invite you to submit feedback for these activities.
- Provide an opportunity to discuss these activities.
- Discuss further ways to consult and engage for these activities.

The Browse to North West Shelf (NWS) Project
Woodside and its Joint Venture partners are proposing to deliver natural gas
from the Torosa, Calliance and Brecknock gas fields, located approximately 425 km north of Broome in the offshore Browse Basin, to the existing Karratha Gas Plant. The gas would be transported via an approximately 900 km trunkline connected to two floating production storage and offtake (FPSO) facilities.

Consultation with Woodside
The attached Summary Consultation Information Sheets have been developed for an Indigenous audience and provide a high-level overview of the activities including the Environment that May Be Affected (EMBA) (Commonwealth EP) and the Operational Area (Commonwealth and State EP). We have also linked the more detailed Consultation Information Sheets here with further information including an assessment of the potential impacts and risks relevant to the activities, as well as mitigation and management measures.

Your consultation correspondence with us about the Commonwealth EP, along with any appropriate control measures included in the EP are considered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), when we submit the EP for assessment.

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 by phoning (08) 6188 8700 or via email at 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: Managing gender-restricted information PL2098.pdf (nopsema.gov.au)

Your feedback, opinions, and comments about the State EP will be reflected in the EP and considered by the Department of Mines, Petroleum and Exploration (DMPE).

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Your Feedback
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 activities
- Other elements we should consider in the Environment Plans
- Any other individuals, groups, or organisations we should talk to about these activities

Underwater Cultural Heritage Study
We've recently completed a desktop study on the Underwater Cultural Heritage of the proposed Browse to NWS Project activity area and have attached an information sheet for your review. We'd like to hear from Traditional Owners and Custodians about their cultural values, stories and traditional knowledge of this proposed activity area to build on what we've found. To provide feedback and learn more about the study please contact us at IndigenousAffairs@woodside.com.

Consultation preferences
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. If you would like us to meet with you as part of Woodside's consultation on this activity, please contact me to discuss and confirm details.

How to contact us and further information
Information can be sent to IndigenousAffairs@woodside.com, via telephone on 1800 442 977 or directly to me.

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. 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 documents to members of WAC and other people and organisations who may be interested.

I look forward to your response and please feel free to call or provide guidance on next steps.

6.1.37 Email sent to Warrwa Combined via KLC – 10 August 2026

We are contacting KLC as the representative for the Warrwa Combined (WC2014/004) Native Title claim. We ask that you please provide the following information to the Warrwa Combined claim group (Warrwa).

Woodside would like to consult with Warrwa about the Browse to NWS Project Geophysical and Geotechnical Surveys Environment Plan (Commonwealth).

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The Environment Plan (EP) relates to geophysical and geotechnical survey activities involving seafloor sampling and scanning, and survey vessel operations in Commonwealth waters.

The purpose of Woodside's consultation with Warrwa is to understand how the activities in the EP could potentially impact the groups' cultural values, interests and activities.

All feedback provided by Warrwa before 10 September 2026 will be reflected in our EP submission and considered by the Commonwealth regulator, National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

Woodside in the course of developing the EP, will assess feedback, opinions and comments provided by the consultation closing date, and where relevant, consider appropriate control measures to include in the EP.

The purpose of this email is to:

- Inform you about our plans for this activity.
- Invite you to submit feedback for this activity.
- Provide an opportunity to discuss this activity.
- Discuss further ways to consult and engage for this activity.

The Browse to North West Shelf (NWS) Project

Woodside and its Joint Venture partners are proposing to deliver natural gas from the Torosa, Calliance and Brecknock gas fields, located approximately 425 km north of Broome in the offshore Browse Basin, to the existing Karratha Gas Plant. The gas would be transported via an approximately 900 km trunkline connected to two floating production storage and offtake (FPSO) facilities.

Consultation with Woodside

The attached Summary Consultation Information Sheet has been developed for an Indigenous audience and provide a high-level overview of the activitiy including the Environment that May Be Affected (EMBA). We have also linked the more detailed Consultation Information Sheets here with further information including an assessment of the potential impacts and risks relevant to the activities, as well as mitigation and management measures.

Your consultation correspondence with us about the EP, along with any appropriate control measures included in the EP will be considered by NOPSEMA, when we submit the EP for assessment.

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 by phoning (08) 6188 8700 or via email at 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)

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- Guideline: Guideline: Consultation in the course of preparing an environment plan (nopsema.gov.au)
- Policy: Managing gender-restricted information PL2098.pdf (nopsema.gov.au)

Your Feedback

- 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 these Environment Plans
- Any other individuals, groups, or organisations we should talk to about these activities

Underwater Cultural Heritage Study

We've recently completed a desktop study on the Underwater Cultural Heritage of the proposed Browse to NWS Project activity area and have attached an information sheet for your review. We'd like to hear from Traditional Owners and Custodians about their cultural values, stories and traditional knowledge of this proposed activity area to build on what we've found. To provide feedback and learn more about the study please contact us at IndigenousAffairs@woodside.com.

Consultation preferences

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. If you would like us to meet with you as part of Woodside's consultation on this activity, please contact me to discuss and confirm details.

How to contact us and further information

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Ongoing Feedback

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Please feel free to forward this email and the attached documents to members of Warrwa Combined and other people and organisations who may be interested.

I look forward to your response and please feel free to call or provide guidance on next steps.

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6.1.38 Email sent to Wunambal Gaambera Aboriginal Corporation (WGAC) – 10 August 2026

Dear Wunambal Gaambera Aboriginal Corporation,

Woodside would like to consult with Wunambal Gaambera Aboriginal Corporation (WGAC) about the Browse to NWS Project Geophysical and Geotechnical Surveys Environment Plan (Commonwealth).

This Environment Plan (EP) relates to geophysical and geotechnical survey activities involving seafloor sampling and scanning, and survey vessel operations in Commonwealth waters.

The purpose of Woodside's consultation with WGAC is to understand how the activities in the EP could potentially impact the group's cultural values, interests and activities.

All feedback provided by WGAC before 10 September 2026 will be reflected in our EP submission and considered by the Commonwealth regulator, National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

Woodside in the course of developing the EP, will assess feedback, opinions and comments provided by the consultation closing date, and where relevant, consider appropriate control measures to include in the EPs.

The purpose of this email is to:

- Inform you about our plans for this activity.
- Invite you to submit feedback for this activity.
- Provide an opportunity to discuss this activity.
- Discuss further ways to consult and engage for this activity.

The Browse to North West Shelf (NWS) Project

Woodside and its Joint Venture partners are proposing to deliver natural gas

from the Torosa, Calliance and Brecknock gas fields, located approximately 425 km north of Broome in the offshore Browse Basin, to the existing Karratha Gas Plant. The gas would be transported via an approximately 900 km trunkline connected to two floating production storage and offtake (FPSO) facilities.

Consultation with Woodside

The attached Summary Consultation Information Sheet has been developed for an Indigenous audience and provides a high-level overview of the EP including the Environment that May Be Affected (EMBA). We have also linked the more detailed Consultation Information Sheet here with further information including an assessment of the potential impacts and risks relevant to the activities, as well as mitigation and management measures.

Your consultation correspondence with us, along with any appropriate control measures included in the EP will be considered by NOPSEMA, when we submit the EP for assessment.

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information directly to NOPSEMA, please do so by phoning (08) 6188 8700 or via email at 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: Managing gender-restricted information PL2098.pdf (nopsema.gov.au)

Your Feedback

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 Plans
- Any other individuals, groups, or organisations we should talk to about this activity.

Underwater Cultural Heritage Study

We've recently completed a desktop study on the Underwater Cultural Heritage of the proposed Browse to NWS Project activity area and have attached an information sheet for your review. We'd like to hear from Traditional Owners and Custodians about their cultural values, stories and traditional knowledge of this proposed activity area to build on what we've found. To provide feedback and learn more about the study please contact us at IndigenousAffairs@woodside.com.

Consultation preferences

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. If you would like us to meet with you as part of Woodside's consultation on this activity, please contact me to discuss and confirm details.

How to contact us and further information

Information can be sent to IndigenousAffairs@woodside.com, via telephone on 1800 442 977 or directly to me.

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. 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

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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 documents to members of WGAC and other people and organisations who may be interested.

I look forward to your response and please feel free to call or provide guidance on next steps.

6.1.39 Email sent to Wanjina-Wunggurr Aboriginal Corporation (WWAC) – 28 April 2026

We are contacting you as the delegated representative for Wanjina-Wunggurr Aboriginal Corporation (WWAC),

Woodside would like to consult with WWAC about two Environment Plans (EPs):

- Browse to NWS Project Geophysical and Geotechnical Surveys EP (Commonwealth)
- Browse to NWS Project Geophysical and Geotechnical Surveys EP (State).

The EPs relate to geophysical and geotechnical survey activities involving seafloor sampling and scanning, and survey vessel operations in both Commonwealth and State waters.

Consultation for both EPs opens on 28 April 2026 and closes on 28 May 2026.

The purpose of Woodside's consultation with WWAC is to understand how the activities in the EPs could potentially impact the group's cultural values, interests and activities.

Woodside in the course of developing the EPs, will assess feedback, opinions and comments provided by the consultation closing date, and where relevant, consider appropriate control measures to include in the EPs.

The purpose of this email is to:

- Inform you about our plans for these activities.
- Invite you to submit feedback for these activities.
- Provide an opportunity to discuss these activities.
- Discuss further ways to consult and engage for these activities.

The Browse to North West Shelf (NWS) Project
Woodside and its Joint Venture partners are proposing to deliver natural gas from the Torosa, Calliance and Brecknock gas fields, located approximately 425 km north of Broome in the offshore Browse Basin, to the existing Karratha Gas Plant. The gas would be transported via an approximately 900 km trunkline connected to two floating production storage and offtake (FPSO) facilities.

Consultation with Woodside
The attached Summary Consultation Information Sheets have been developed for an Indigenous audience and provide a high-level overview of the activities including the Environment that May Be Affected (EMBA) (Commonwealth EP) and the Operational Area (Commonwealth and State EP). We have also linked the more detailed Consultation Information Sheets here with further information including an assessment of the potential impacts and risks relevant to the activities, as well as mitigation and management measures.

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Your consultation correspondence with us, along with any appropriate control measures included in the EP are considered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), when we submit the EP for assessment.

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 by phoning (08) 6188 8700 or via email at 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: Managing gender-restricted information PL2098.pdf (nopsema.gov.au)

Your feedback, opinions and comments about the state EP will be reflected in the EP and considered by the Department of Mines, Petroleum and Exploration (DMPE).

Your Feedback
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 activities
- Other elements we should consider in the Environment Plans
- Any other individuals, groups, or organisations we should talk to about these activities

Underwater Cultural Heritage Study
We've recently completed a desktop study on the Underwater Cultural Heritage of the proposed Browse to NWS Project activity area and have attached an information sheet for your review. We'd like to hear from Traditional Owners and Custodians about their cultural values, stories and traditional knowledge of this proposed activity area to build on what we've found. To provide feedback and learn more about the study please contact us at IndigenousAffairs@woodside.com.

Consultation preferences
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. If you would like us to meet with you as part of Woodside's consultation on this activity, please contact me to discuss and confirm details.

How to contact us and further information
Information can be sent to IndigenousAffairs@woodside.com, via telephone on 1800 442 977 or directly to me.

Ongoing Feedback
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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 documents to members of WWAC and other people and organisations who may be interested.
I look forward to your response and please feel free to call or provide guidance on next steps.

6.1.40 Email sent to Wilinggin Aboriginal Corporation (Wilinggin) – 28 April 2026

Dear Wilinggin Aboriginal Corporation (Wilinggin),

Woodside would like to consult with Wilinggin about two Environment Plans (EPs):

- Browse to NWS Project Geophysical and Geotechnical Surveys EP (Commonwealth)
- Browse to NWS Project Geophysical and Geotechnical Surveys EP (State).

The EPs relate to geophysical and geotechnical survey activities involving seafloor sampling and scanning, and survey vessel operations in both Commonwealth and State waters.

Consultation for both EPs opens on 28 April 2026 and closes on 28 May 2026.

The purpose of Woodside's consultation with Wilinggin is to understand how the activities in the EPs could potentially impact the group's cultural values, interests and activities.

Woodside in the course of developing the EPs, will assess feedback, opinions and comments provided by the consultation closing date, and where relevant, consider appropriate control measures to include in the EPs.
The purpose of this email is to:

- Inform you about our plans for these activities.
- Invite you to submit feedback for these activities.
- Provide an opportunity to discuss these activities.
- Discuss further ways to consult and engage for these activities.

The Browse to North West Shelf (NWS) Project
Woodside and its Joint Venture partners are proposing to deliver natural gas from the Torosa, Calliance and Brecknock gas fields, located approximately 425 km north of Broome in the offshore Browse Basin, to the existing Karratha Gas Plant. The gas would be transported via an approximately 900 km trunkline connected to two floating production storage and offtake (FPSO) facilities.

Consultation with Woodside
The attached Summary Consultation Information Sheets have been developed for an Indigenous audience and provide a high-level overview of the activities including the Environment that May Be Affected (EMBA) (Commonwealth EP) and the Operational Area (Commonwealth and State EP). We have also linked the more detailed Consultation Information Sheets here with further information including an assessment of the potential impacts and risks relevant to the activities, as well as mitigation and management measures.
Your consultation correspondence with us, along with any appropriate control measures included in the EP are considered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), when we submit the EP for assessment.
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

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information directly to NOPSEMA, please do so by phoning (08) 6188 8700 or via email at 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: Managing gender-restricted information PL2098.pdf (nopsema.gov.au)

Your feedback, opinions and comments about the state EP will be reflected in the EP and considered by the Department of Mines, Petroleum and Exploration (DMPE).

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 activities
- Other elements we should consider in the Environment Plans
- Any other individuals, groups, or organisations we should talk to about these activities

Underwater Cultural Heritage Study
We've recently completed a desktop study on the Underwater Cultural Heritage of the proposed Browse to NWS Project activity area and have attached an information sheet for your review. We'd like to hear from Traditional Owners and Custodians about their cultural values, stories and traditional knowledge of this proposed activity area to build on what we've found. To provide feedback and learn more about the study please contact us at IndigenousAffairs@woodside.com.

Consultation preferences
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. If you would like us to meet with you as part of Woodside's consultation on this activity, please contact me to discuss and confirm details.

How to contact us and further information
Information can be sent to IndigenousAffairs@woodside.com, via telephone on 1800 442 977 or directly to me.

Ongoing Feedback
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Please feel free to forward this email and the attached documents to members of Wilinggin and other people and organisations who may be interested.

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I look forward to your response and please feel free to call or provide guidance on next steps.

6.1.41 Email sent to Yawuru Aboriginal Corporation (Yawuru) – 29 April 2026

Woodside would like to consult with Yawuru Aboriginal Corporation (Yawuru) about two Environment Plans (EPs):

- Browse to NWS Project Geophysical and Geotechnical Surveys EP (Commonwealth)
- Browse to NWS Project Geophysical and Geotechnical Surveys EP (State).

The EPs relate to geophysical and geotechnical survey activities involving seafloor sampling and scanning, and survey vessel operations in both Commonwealth and State waters.

Consultation for both EPs opens on 28 April 2026 and closes on 28 May 2026.

The purpose of Woodside's consultation with Yawuru is to understand how the activities in the EPs could potentially impact the group's cultural values, interests and activities.

Woodside in the course of developing the EPs, will assess feedback, opinions and comments provided by the consultation closing date, and where relevant, consider appropriate control measures to include in the EPs.

The purpose of this email is to:

- Inform you about our plans for these activities.
- Invite you to submit feedback for these activities.
- Provide an opportunity to discuss these activities.
- Discuss further ways to consult and engage for these activities.

The Browse to North West Shelf (NWS) Project
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Consultation with Woodside
The attached Summary Consultation Information Sheets have been developed for an Indigenous audience and provide a high-level overview of the activities including the Environment that May Be Affected (EMBA) (Commonwealth EP) and the Operational Area (Commonwealth and State EP). We have also linked the more detailed Consultation Information Sheets here with further information including an assessment of the potential impacts and risks relevant to the activities, as well as mitigation and management measures.

Your consultation correspondence with us about the Commonwealth EP, along with any appropriate control measures included in the EP are considered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), when we submit the EP for assessment.

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 by phoning (08) 6188 8700 or via email at communications@nopsema.gov.au .

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- Guideline: Guideline: Consultation in the course of preparing an environment plan (nopsema.gov.au)
- Policy: Managing gender-restricted information PL2098.pdf (nopsema.gov.au)

Your feedback, opinions and comments about the state EP will be reflected in the EPs and considered by the Department of Mines, Petroleum and Exploration (DMPE).

Your Feedback
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 activities
- Other elements we should consider in the Environment Plans
- Any other individuals, groups, or organisations we should talk to about these activities

Underwater Cultural Heritage Study
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Consultation preferences
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. If you would like us to meet with you as part of Woodside's consultation on this activity, please contact me to discuss and confirm details.

How to contact us and further information
Information can be sent to IndigenousAffairs@woodside.com, via telephone on 1800 442 977 or directly to me.

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. 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 documents to members of Yawuru and other people and organisations who may be interested.

I look forward to your response and please feel free to call or provide guidance on next steps.

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6.1.42 Email sent to Department of Foreign Affairs and Trade (DFAT) – 19 June 2026

Dear Department of Foreign Affairs and Trade

Woodside is planning to submit the Browse to North West Shelf (NWS) Project Geophysical and Geotechnical (GPGT) Surveys Commonwealth and State Environment Plans (EP).

The Operational Area for the **Browse to NWS Project GPGT Surveys (Commonwealth) EP** covers several petroleum titles in Commonwealth waters: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R, and G-8-AP. It includes:

- Operational Area A – the Torosa field, located approximately 430 km north-northwest of Broome
- Operational Area B – the Calliance and Brecknock fields, located approximately 370 km north-northwest of Broome.

The Operational Area for the **Browse to NWS Project GPGT Surveys (State) EP** overlaps Petroleum Titles TR/5 R2, located in State waters approximately 430 km north-northwest of Broome.

If you would like to comment on the proposed activities, please provide feedback to Woodside by **20 July 2026** using the details below.

Overview

Woodside has previously undertaken GPGT surveys in the Browse Basin as part of earlier project concepts.

A series of new GPGT surveys is proposed to support potential future activities associated with the Browse to NWS Project. These surveys will be conducted across both Commonwealth and State waters and are organised into three Environment Plans (EPs):

- Browse to NWS Project GPGT Surveys EP (Commonwealth) – the subject of this consultation
- Browse to NWS Project GPGT Surveys EP (State) – the subject of this consultation
- Browse to NWS Project Trunkline GPGT Surveys EP (Commonwealth).

Survey data is intended to inform the design and installation of the proposed trunkline, pipelines and umbilicals, subsea structures, and the mooring systems for the two proposed floating production storage and offtake (FPSO) facilities and mobile offshore drilling units (MODUs).

Data may also contribute to assessments of existing infrastructure, support environmental and heritage studies, and assist in planning potential future project activities.

You can read more about the Browse Project on our website.

Consultation information

Consultation Information Sheets are attached, which provide additional background on our approach to consultation, and on the proposed activities including summaries of potential key impacts and risks and associated management measures. These are also available on our website.

International Consultation

Woodside's approach to international consultation has been developed following advice provided by the Department of Foreign Affairs and Trade (DFAT) during consultation on the Pyrenees Facility Operations Environment Plan, Stybarrow Plug and Abandonment Environment Plan and WA-34-L Pyxis Drilling and Subsea Installation Environment Plan Revision.

Woodside acknowledges that DFAT is responsible for the management of communications and sensitivities with other countries, and that DFAT has requested Woodside not contact foreign embassies directly.

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Woodside is consulting DFAT as the Environment that may be affected (EMBA) for these EPs overlaps the Traditional Indonesian fishing Memorandum of Understanding Box near Scott Reef. Woodside has also consulted AFMA in relation to these EPs.

Activity and location summary

Browse to NWS Project GPGT Surveys Environment Plan (EP)		
	Commonwealth EP	**State EP**
Activity details	**Geophysical surveys within the Operational Area using:** • Multibeam echosounder (MBES), single beam echo sounder, altimeter • Side scan sonar (SSS) including variants such as multi-aperture and synthetic aperture sonar • Magnetometer / gradiometer and pipe tracker • Sub-bottom profiler (SBP), such as but not limited to boomer, sparker, pinger, chirp, and parametric SBP. **Geotechnical surveys within the Operational Area using:** • Box corer / grab sampler • Shallow cores and probes: piston core / gravity core / vibrocore • Borehole sampling / coring / in situ testing • Cone penetrometer testing (CPT/PCPT/CPTu). **Other survey equipment being used:** • Water sampler • Sound velocity sensor / multi-parameter conductivity-temperature-depth profiler • Ultra-short baseline (USBL) positioning system • Doppler velocity log and Inertial navigation system • Underwater camera • Underwater laser scanner • Remotely operated vehicle (ROV) • Autonomous underwater vehicle (AUV).	
Titles	• Petroleum licences: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R. • Greenhouse Gas permit G-8-AP.	• Petroleum licence: TR/5 R2.
Location	In Commonwealth waters ~ 430 km north-northwest of Broome (Operational Area A) and ~ 370 km north-northwest of Broome (Operational Area B).	In State waters ~ 430 km north-northwest of Broome.

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Water depth	~ 350 m - 900 m	~ 75 m - 700 m
Timing	Anticipated to commence from ~ Q3 2027.	
Duration	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-60 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 90 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-40 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 40 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.
Vessels	Multi-purpose vessels, uncrewed surface vessels, geotechnical drilling vessels and support vessels.	
Operational Area and exclusion zones	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Areas may vary. • Operational Areas are within Commonwealth waters.	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within State waters.
Communication with mariners	• Commercial fishers and other marine users are permitted to use the Operational Area but should take care around operations by adhering to standard navigation rules and remain clear of the safety exclusion zone. • Marine notices will be issued prior to activity commencement to alert vessels which may be operating in waters nearby.	

Environment that May Be Affected (EMBA)

The EMBA is the largest geographic area where an unplanned event could potentially have an environmental consequence. The broadest extent of the EMBA takes into consideration planned activities and unplanned events. The EMBA has been developed combining numerous modelling outputs based on

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highly unlikely releases of hydrocarbons to the environment. The modelling scenarios that inform the EMBA are for a vessel collision.

The EMBA does not represent the extent of the predicted impact of a highly unlikely hydrocarbon release. Rather, the EMBA represents the merged area of many possible paths that a highly unlikely hydrocarbon release could travel, which depends on the weather and ocean conditions at the time of a release. This means that in the highly unlikely event that a hydrocarbon release does occur, the whole EMBA would not be affected. The specific and minimal part of the EMBA that is affected will only be known if there is a release.

Feedback

If you have feedback specific to the proposed activities, we welcome your feedback via email at feedback@woodside.com, via phone call at 1800 442 977 or via the feedback form on our website by **20 July 2026**. Alternatively, Woodside is willing to consider and accept your feedback via a means which suits you.

Your feedback and our response will be included in our EPs. The Commonwealth EP 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). The State EP will be submitted to the Department of Mines, Petroleum and Exploration (DMPE) for acceptance in accordance with the *Petroleum (Submerged Lands) (Environment) Regulations 2012* (WA). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

You may request that particular information you provide during consultation not be published in the EP made available on the NOPSEMA website. Please let us know if you request that particular information not be published, and we will make your request known to NOPSEMA.

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 Feedback

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6.1.43 Email sent to Kimberley Ports – 9 June 2026

Woodside is planning to submit the Browse to North West Shelf (NWS) Project Geophysical and Geotechnical (GPGT) Surveys Commonwealth and State Environment Plans (EP).

The Operational Area for the **Browse to NWS Project GPGT Surveys (Commonwealth) EP** covers several petroleum titles in Commonwealth waters: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R, and G-8-AP. It includes:

- Operational Area A – the Torosa field, located approximately 430 km north-northwest of Broome
- Operational Area B – the Calliance and Brecknock fields, located approximately 370 km north-northwest of Broome.

The Operational Area for the **Browse to NWS Project GPGT Surveys (State) EP** overlaps Petroleum Titles TR/5 R2, located in State waters approximately 430 km north-northwest of Broome.

If you would like to comment on the proposed activities, please provide feedback to Woodside by **9 July 2026** using the details below.

Overview

Woodside has previously undertaken GPGT surveys in the Browse Basin as part of earlier project concepts.

A series of new GPGT surveys is proposed to support potential future activities associated with the Browse to NWS Project. These surveys will be conducted across both Commonwealth and State waters and are organised into three Environment Plans (EPs):

- Browse to NWS Project GPGT Surveys EP (Commonwealth) – the subject of this consultation
- Browse to NWS Project GPGT Surveys EP (State) – the subject of this consultation
- Browse to NWS Project Trunkline GPGT Surveys EP (Commonwealth).

Survey data is intended to inform the design and installation of the proposed trunkline, pipelines and umbilicals, subsea structures, and the mooring systems for the two proposed floating production storage and offtake (FPSO) facilities and mobile offshore drilling units (MODUs).

Data may also contribute to assessments of existing infrastructure, support environmental and heritage studies, and assist in planning potential future project activities.

You can read more about the Browse Project on our website.

Consultation information

Consultation Information Sheets are attached, which provide additional background on our approach to consultation, and on the proposed activities including summaries of potential key impacts and risks and associated management measures. These are also available on our website.

Activity and location summary

Browse to NWS Project GPGT Surveys Environment Plans		
	Commonwealth EP	**State EP**

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Activity details	**Geophysical surveys within the Operational Area using:** • Multibeam echosounder (MBES), single beam echo sounder, altimeter • Side scan sonar (SSS) including variants such as multi-aperture and synthetic aperture sonar • Magnetometer / gradiometer and pipe tracker • Sub-bottom profiler (SBP), such as but not limited to boomer, sparker, pinger, chirp, and parametric SBP. **Geotechnical surveys within the Operational Area using:** • Box corer / grab sampler • Shallow cores and probes: piston core / gravity core / vibrocore • Borehole sampling / coring / in situ testing • Cone penetrometer testing (CPT/PCPT/CPTu). **Other survey equipment being used:** • Water sampler • Sound velocity sensor / multi-parameter conductivity-temperature-depth profiler • Ultra-short baseline (USBL) positioning system • Doppler velocity log and Inertial navigation system • Underwater camera • Underwater laser scanner • Remotely operated vehicle (ROV) • Autonomous underwater vehicle (AUV).	
Titles	• Petroleum licences: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R. • Greenhouse Gas permit G-8-AP.	• Petroleum licence: TR/5 R2.
Location	In Commonwealth waters ~ 430 km north-northwest of Broome (Operational Area A) and ~ 370 km north-northwest of Broome (Operational Area B).	In State waters ~ 430 km north-northwest of Broome.
Water depth	~ 350 m - 900 m	~ 75 m - 700 m
Timing	Anticipated to commence from ~ Q3 2027.	

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Duration	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-60 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 90 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.	• Surveys anticipated to be completed over several multi-week campaigns (typically 20-40 days in duration) split over the five-year duration of the EP. • Estimated to take up to a maximum of 40 days per year (during anytime in the calendar year). Survey vessels may operate continuously, up to 24 hours a day. • Timing and duration are subject to change due to factors including approvals, weather, survey vessel availability and other unforeseen circumstances.
Vessels	Multi-purpose vessels, uncrewed surface vessels, geotechnical drilling vessels and support vessels.	
Operational Area and exclusion zones	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Areas may vary. • Operational Areas are within Commonwealth waters.	The location of infrastructure is marked on nautical charts. The Operational Area and exclusion zones include: • Temporary 500m exclusion zone around vessels conducting survey activities to manage vessel movements. To note: • The exact location of the proposed surveys within the Operational Area may vary. • Operational Area is within State waters.
Communication with mariners	• Commercial fishers and other marine users are permitted to use the Operational Area but should take care around operations by adhering to standard navigation rules and remain clear of the safety exclusion zone. • Marine notices will be issued prior to activity commencement to alert vessels which may be operating in waters nearby.	

Environment that May Be Affected (EMBA)

The EMBA is the largest geographic area where an unplanned event could potentially have an environmental consequence. The broadest extent of the EMBA takes into consideration planned activities and unplanned events. The EMBA has been developed combining numerous modelling outputs based on highly unlikely releases of hydrocarbons to the environment. The modelling scenarios that inform the EMBA are for a vessel collision.

The EMBA does not represent the extent of the predicted impact of a highly unlikely hydrocarbon release. Rather, the EMBA represents the merged area of many possible paths that a highly unlikely hydrocarbon release could travel, which depends on the weather and ocean conditions at the time of a release. This

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means that in the highly unlikely event that a hydrocarbon release does occur, the whole EMBA would not be affected. The specific and minimal part of the EMBA that is affected will only be known if there is a release.

Feedback

If you have feedback specific to the proposed activities, we welcome your feedback via email at feedback@woodside.com, via phone call at 1800 442 977 or via the feedback form on our website by **9 July 2026**. Alternatively, Woodside is willing to consider and accept your feedback via a means which suits you.

Your feedback and our response will be included in our EPs. The Commonwealth EP 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). The State EP will be submitted to the Department of Mines, Petroleum and Exploration (DMPE) for acceptance in accordance with the *Petroleum (Submerged Lands) (Environment) Regulations 2012* (WA). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

You may request that particular information you provide during consultation not be published in the EP made available on the NOPSEMA website. Please let us know if you request that particular information not be published, and we will make your request known to NOPSEMA.

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 Feedback

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6.2 Follow-up consultation

6.2.1 Email sent to Australian Border Force; Australian Conservation Foundation (ACF); Australian Communications and Media Authority (ACMA); Australian Energy Producers (AEP); Australian Institute of Marine Science (AIMS); Australian Marine Conservation Society (AMCS); Australian Maritime Safety Authority (AMSA) – Marine Pollution; Australian Maritime Safety Authority (AMSA) – Marine Safety; Australian Southern Bluefin Tuna Industry Association (ASBTIA); Beach Energy; Broome Chamber of Commerce and Industry (BCCI); Commonwealth Fisheries Association (CFA); Commonwealth Scientific and Industrial Research Organisation (CSIRO); Conservation Council of WA (CCWA); Curtin University; Department of Agriculture, Fisheries and Forestry (DAFF) – Biosecurity; Department of Agriculture, Fisheries and Forestry (DAFF) – Fisheries; Department of Biodiversity, Conservation and Attractions (DBCA); Department of Defence (DoD); Department of Climate Change, Energy, the Environment and Water (DCCEEW); Department of Industry, Science and Resources (DISR); Department of Mines, Petroleum and Exploration (DMPE); Department of Planning, Lands and Heritage (DPLH); Department of Primary Industries and Regional Development (DPIRD); Department of Water and Environmental Regulation (DWER); Director of National Parks (DNP); Edith Cowan University (ECU); Environs Kimberley; Greenpeace Australia Pacific (GPAP); Marine Tourism WA; Murdoch University; North West Slope Trawl Fishery Licence Holders; Origin Energy; Pilbara/Kimberley Recreational Marine Users; Recfishwest; Shire of Broome; Tuna Australia; University of Western Australia (UWA); WA Game Fishing Association; Western Australian Marine Science Institution (WAMSI); Western Australian Museum (WAM) – 21 May 2026

Woodside previously consulted you on its plans to submit the Browse to North West Shelf (NWS) Project Geophysical and Geotechnical (GPGT) Surveys Commonwealth and State Environment Plans (EP).

The Operational Area for the **Browse to NWS Project GPGT Surveys (Commonwealth) EP** covers several petroleum titles in Commonwealth waters: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R, and G-8-AP. It includes:

- Operational Area A – the Torosa field, located approximately 430 km north-northwest of Broome
- Operational Area B – the Calliance and Brecknock fields, located approximately 370 km north-northwest of Broome.

The Operational Area for the **Browse to NWS Project GPGT Surveys (State) EP** overlaps Petroleum Titles TR/5 R2, located in State waters approximately 430 km north-northwest of Broome.

Additional information on the EPs is provided in the previous email below and in the Consultation Information Sheets attached, which are also available on Woodside's website.

Overview

Woodside has previously undertaken GPGT surveys in the Browse Basin as part of earlier project concepts.

A series of new GPGT surveys is proposed to support potential future activities associated with the Browse to NWS Project. These surveys will be conducted across both Commonwealth and State waters and are organised into three Environment Plans (EPs):

- Browse to NWS Project GPGT Surveys EP (Commonwealth) – the subject of this consultation
- Browse to NWS Project GPGT Surveys EP (State) – the subject of this consultation

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- Browse to NWS Project Trunkline GPGT Surveys EP (Commonwealth).

Survey data is intended to inform the design and installation of the proposed trunkline, pipelines and umbilicals, subsea structures, and the mooring systems for the two proposed floating production storage and offtake (FPSO) facilities and mobile offshore drilling units (MODUs).

Data may also contribute to assessments of existing infrastructure, support environmental and heritage studies, and assist in planning potential future project activities.

You can read more about the Browse Project on our website.

Feedback

If you have feedback specific to the proposed activities, we welcome your feedback via email at feedback@woodside.com, via phone call at 1800 442 977 or via the feedback form on our website by **28 May 2026**. Alternatively, Woodside is willing to consider and accept your feedback via a means which suits you.

Your feedback and our response will be included in our EPs. The Commonwealth EP 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). The State EP will be submitted to the Department of Mines, Petroleum and Exploration (DMPE) for acceptance in accordance with the *Petroleum (Submerged Lands) (Environment) Regulations 2012* (WA). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

You may request that particular information you provide during consultation not be published in the EP made available on the NOPSEMA website. Please let us know if you request that particular information not be published, and 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 Feedback

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6.2.2 Email sent to Western Australian Fishing Industry Council (WAFIC) – 21 May 2026

Dear WAFIC

Woodside previously consulted you on its plans to submit the Browse to North West Shelf (NWS) Project Geophysical and Geotechnical (GPGT) Surveys Commonwealth and State Environment Plans (EP)s.

The Operational Area for the **Browse to NWS Project GPGT Surveys (Commonwealth) EP** covers several petroleum titles in Commonwealth waters: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R, and G-8-AP. It includes:

- Operational Area A – the Torosa field, located approximately 430 km north-northwest of Broome
- Operational Area B – the Calliance and Brecknock fields, located approximately 370 km north-northwest of Broome.

The Operational Area for the **Browse to NWS Project GPGT Surveys (State) EP** overlaps Petroleum Titles TR/5 R2, located in State waters approximately 430 km north-northwest of Broome.

Additional information on the EPs is provided in the previous email below and in the Consultation Information Sheets attached, which are also available on Woodside's website.

As per WAFIC's consultation guidance, Woodside does not require this reminder to be distributed to individual licence holders.

Overview

Woodside has previously undertaken GPGT surveys in the Browse Basin as part of earlier project concepts.

A series of new GPGT surveys is proposed to support potential future activities associated with the Browse to NWS Project. These surveys will be conducted across both Commonwealth and State waters and are organised into three Environment Plans (EPs):

- Browse to NWS Project GPGT Surveys EP (Commonwealth) – the subject of this consultation
- Browse to NWS Project GPGT Surveys EP (State) – the subject of this consultation
- Browse to NWS Project Trunkline GPGT Surveys EP (Commonwealth).

Survey data is intended to inform the design and installation of the proposed trunkline, pipelines and umbilicals, subsea structures, and the mooring systems for the two proposed floating production storage and offtake (FPSO) facilities and mobile offshore drilling units (MODUs).

Data may also contribute to assessments of existing infrastructure, support environmental and heritage studies, and assist in planning potential future project activities.

You can read more about the Browse Project on our website.

Feedback

If you have feedback specific to the proposed activities, we welcome your feedback via email at feedback@woodside.com, via phone call at 1800 442 977 or via the feedback form on our website by **28 May 2026**. Alternatively, Woodside is willing to consider and accept your feedback via a means which suits you.

Your feedback and our response will be included in our EPs. The Commonwealth EP 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*

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2023 (Cth). The State EP will be submitted to the Department of Mines, Petroleum and Exploration (DMPE) for acceptance in accordance with the *Petroleum (Submerged Lands) (Environment) Regulations 2012* (WA). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

You may request that particular information you provide during consultation not be published in the EP made available on the NOPSEMA website. Please let us know if you request that particular information not be published, and 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 Feedback

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6.2.3 Letter sent to Pilbara/Kimberly Recreational Marine Users – 19 May 2026

Please direct all responses/queries to:
Woodside Energy Feedback
t: +61 8 (1)800 442 977
e: feedback@woodside.com.au

19 May 2026

1
[redacted]

Woodside Energy

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

Dear Stakeholder

BROWSE TO NORTH WEST SHELF (NWS) PROJECT GEOPHYSICAL AND GEOTECHICAL (GPGT) SURVEYS ENVIRONMENT PLANS

Woodside previously consulted you on its plans to submit the following Environment Plans (EPs):

1. Browse to NWS Project GPGT Surveys (Commonwealth) EP
2. Browse to NWS Project GPGT Surveys (State) EP
3. Browse to NWS Project Trunkline GPGT Surveys (Commonwealth) EP.

If you would like to comment on the proposed activities, please provide feedback to Woodside by 28 May 2026 using the details below.

Further information on the proposed activities is provided in the Consultation Information Sheets which are available via the QR code below:

If you have feedback specific to the activities and the proposed EP, Woodside welcomes it at feedback@woodside.com or via phone call at 1800 442 977 by **28 May 2026**.

Your feedback and our response will be included in our EPs. The Commonwealth EPs 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). The State EP will be submitted to the Department of Mines, Petroleum and Exploration (DMPE) for acceptance in accordance with the *Petroleum (Submerged Lands) (Environment) Regulations 2012* (WA). 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 www.woodside.com/what-we-do/consultation-activities

Regards

Woodside Energy Feedback

Woodside Energy

Woodside Energy
Mia Yellagonga
Karlak, 11 Mount Street
Perth WA 6000
Australia

T: 1800 442 977
E: feedback@woodside.com
www.woodside.com

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6.2.4 Email sent to Kimberly Ports – 2 July 2026

Woodside previously consulted you on its plans to submit the Browse to North West Shelf (NWS) Project Geophysical and Geotechnical (GPGT) Surveys Commonwealth and State Environment Plans (EP)s.

The Operational Area for the **Browse to NWS Project GPGT Surveys (Commonwealth) EP** covers several petroleum titles in Commonwealth waters: WA-30-R, WA-28-R, WA-29-R, WA-31-R, WA-32-R, and G-8-AP. It includes:

- Operational Area A – the Torosa field, located approximately 430 km north-northwest of Broome
- Operational Area B – the Calliance and Brecknock fields, located approximately 370 km north-northwest of Broome.

The Operational Area for the **Browse to NWS Project GPGT Surveys (State) EP** overlaps Petroleum Titles TR/5 R2, located in State waters approximately 430 km north-northwest of Broome.

Additional information on the EPs is provided in the previous email below and in the Consultation Information Sheets attached, which are also available on Woodside's website.

Overview

Woodside has previously undertaken GPGT surveys in the Browse Basin as part of earlier project concepts.

A series of new GPGT surveys is proposed to support potential future activities associated with the Browse to NWS Project. These surveys will be conducted across both Commonwealth and State waters and are organised into three Environment Plans (EPs):

- Browse to NWS Project GPGT Surveys EP (Commonwealth) – the subject of this consultation
- Browse to NWS Project GPGT Surveys EP (State) – the subject of this consultation
- Browse to NWS Project Trunkline GPGT Surveys EP (Commonwealth).

Survey data is intended to inform the design and installation of the proposed trunkline, pipelines and umbilicals, subsea structures, and the mooring systems for the two proposed floating production storage and offtake (FPSO) facilities and mobile offshore drilling units (MODUs).

Data may also contribute to assessments of existing infrastructure, support environmental and heritage studies, and assist in planning potential future project activities.

You can read more about the Browse Project on our website.

Feedback

If you have feedback specific to the proposed activities, we welcome your feedback via email at feedback@woodside.com, via phone call at 1800 442 977 or via the feedback form on our website by **9 July 2026**. Alternatively, Woodside is willing to consider and accept your feedback via a means which suits you.

Your feedback and our response will be included in our EPs. The Commonwealth EP 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). The State EP will be submitted to the Department of Mines, Petroleum and Exploration (DMPE) for acceptance in accordance with the *Petroleum (Submerged Lands) (Environment) Regulations 2012* (WA). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

You may request that particular information you provide during consultation not be published in the EP made available on the NOPSEMA website. Please let us know if you request that particular information not be published, and we will make your request known to NOPSEMA.

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Regards

Woodside Energy Feedback

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6.3 Newspaper advertisements

6.3.1 The Australian – 28 April 2026

THE AUSTRALIAN TUESDAY, APRIL 28, 2026

The kitchen table pitch to salvage state Libs

INSIDE STORY

ANTHONY GALLOWAY
VICTORIAN POLITICAL EDITOR

Brian Loughnane sat at Jess Wilson's kitchen table in Melbourne's eastern suburbs, listening as the Victorian Liberal leader and her friend, federal senator James Paterson, made their pitch.

It was Saturday morning, April 11, and the conversation carried consequences well beyond the room. Wilson and Paterson wanted Loughnane, the party's former federal and state director and one of its most experienced campaign strategists, to take over the state presidency of a division long plagued by internal conflict. Two decades earlier, such an approach would have been made in the smoke-filled rooms of the Melbourne Club, but this was conducted in the home of a 35-year-old leader trying to steady a fractious party, as her young son Patrick's toys lay scattered on the floor.

For Wilson and Paterson, Loughnane was the ideal candidate: a seasoned operator who had overseen the federal party's landslide victories in 2004 and 2013, and who might impose a measure of discipline and professionalism on a divided state division.

But he needed convincing.

Loughnane needed only to consider the circumstances confronting the incumbent, Philip Davis, to understand the risks of taking on this unpaid role.

Davis was being sued by members of his own state executive over a $1.55m loan to former leader John Pesutto, a dispute that had come to symbolise the party's internal dysfunction.

In fact, the Victorian division's factional warfare stretches back more than a decade, defying successive attempts at reconciliation and leaving no figure yet able to unite its warring camps.

If Loughnane were to step in, it would be on his terms. Any nomination would need to be uncontested, carry support across the party's factions, and be strictly time-limited. He would guide the party's organisational wing to the November state election, then leave shortly after.

Along with the two senior Victorians, federal leader Angus Taylor was also urging Loughnane to take on the position.

Wilson and Paterson then went about the delicate task of winning over the opposing factions in the party, in the hope that a reluctant recruit might yet be convinced to take on one of the most thankless roles in Victorian politics.

'Line in the sand'

On the day Wilson claimed party leadership from Brad Battin in November, she reached for a familiar political metaphor.

"Today is a line in the sand," she told Sky News host Peta Credlin, pitching her unopposed elevation as both a reset and a chance to steady a party that had just turned to its third leader in a year. Credlin, Tony Abbott's former chief of staff, also happens to be married to Loughnane.

Wilson spoke of unity, of a "broad church" leadership team, and of a party at its best when its competing factions pull in the same direction.

The moderate Wilson had taken the leadership with the support of conservative backers including upper house MP Bev McArthur, who became upper house leader, and Paterson, a key powerbroker in the national Right.

The problem for Wilson was that while she had successfully brought the parliamentary team together, the organisational wing was still in an internal war.

The rebel group of conservative members, led by state executive member Colleen Harkin, was suing the party and its leadership over the loan to Pesutto to cover his defamation of Liberal MP Moira Deeming over her appearance at a Let Women Speak rally in March 2023.

Davis ally and state director Stuart Smith had also recently resigned after leaked messages published in The Australian showed him mocking the party's women's council and 76-year-old McArthur. While Wilson, 36, and Davis, 73, are both associated with the moderate faction, they are not aligned. When she took the leadership, there was no immediate move against Davis, who had only narrowly fended off a challenge from Greg Mirabella to retain the presidency two months earlier.

But in the months that followed, the relationship steadily deteriorated.

Davis fate sealed

The balance shifted decisively on March 29, when Deeming was dumped from the upper house ticket in favour of Dinesh Gounaserty. Within hours, it emerged Gounaserty had provided a character reference for a convicted sex offender, rendering him ineligible. Davis, as chair of the applicant review committee that vetted candidates, came under renewed pressure. His internal critics, including Harkin and fellow state executive member Marcus Li, moved quickly to call for his resignation.

Even then, Wilson's camp held back. It lacked a viable alternative, and state conference was looming on May 23.

The turning point came a week later. In an interview with The Age on Sunday, April 6, Davis accused what he implied to be a cabal of conspirators – internal critics, Sky News, Credlin and News Corp newspapers – of seeking to remake the party into One Nation-lite.

For Wilson and her allies, the intervention was the moment they decided Davis needed to go. It reinforced a growing view within her camp that Davis could not bridge the divide in the party, and was only further entrenching it.

The difficulty was finding a replacement.

Several senior Liberal figures, including former federal ministers Mitch Fifield and Greg Hunt, ex-state cabinet minister Mark Birrell and former party president Ian Cancon, had already been approached and declined.

Moderates needed convincing

Loughnane was always Wilson and Paterson's dream candidate given his stature in the party and campaign expertise.

The pitch was very much modelled on Wilson's own ascent to the leadership, in which she was backed by both conservatives and moderates and avoided a "winner's takes all approach". But the moderate wing, in particular, needed reassurance.

The night after Davis's comments were published, Credlin sharpened the pressure on Davis publicly, questioning whether he was up to the job of uniting the party. "If Phil Davis can't do that, then he should just resign and let someone who knows how to win... do the job that he, self-evidently is not up to," she said on her Sky News program.

While those who have known Loughnane and Credlin for decades insist it is simplistic to view them as a single entity, some still sought reassurance. On the night of Friday, April 17, Paterson and Loughnane met in Melbourne's CBD with three of Davis's vice-presidents – Holly Byrne, Catherine Burnett-Wake and Geoff Gledhill – and treasurer Karen Sobels. The meeting with the key moderates, held before a gathering of the party's state assembly, proved pivotal.

Some moderates who worked under Loughnane during federal campaigns tell The Australian they needed little persuasion, viewing him as a disciplined operator above factional politics. Others were wary, concerned the move amounted to Credlin gaining the presidency "by stealth". Quiet assurances from those who had worked with Loughnane helped settle those doubts.

While not all welcomed the loss of factional control, few were prepared to stand in the way of Wilson's preferred candidate.

Loughnane's name was also floated with Liberal luminaries including Jeff Kennett, Peter Costello, Michael Kroger and Ted Baillieu, who were all supportive.

By April 23, after The Australian revealed Wilson's approach, she and Paterson began calling MPs across the party. There was near-uniform support for the move – unheard of in the Victorian division. But less than 48 hours before nominations closed, the outcome remained uncertain.

Loughnane lodged his nomination on Friday. But there was one final complication.

Four other candidates – Davis, Gledhill, Nigel Kibble and Ian Quick – also nominated. Kibble, Quick and Gledhill quickly withdrew. But as Wilson marked her 36th birthday on Saturday, it was still unclear if the deal would hold.

On Sunday, Davis withdrew.

People who had spent years fighting each other agreed to back Loughnane, a decision senior figures hope shows a determination to move on from the petty internal fights of the past for the sake of winning the state election.

For Wilson, it was the final piece to fall into place as she prepares for the real contest against Jacinta Allan in November.





NEWS CORP AUSTRALIA, DAVID CROLLING, MARTIN COLLAN/NEWSWIRE

Liberal elder Brian Loughnane, Victorian Opposition Leader Jess Wilson, Liberal senator James Paterson; below, ousted state party president Phillip Davis



Browse to NWS Project Geophysical and Geotechnical Surveys Environment Plans

(Commonwealth and State)

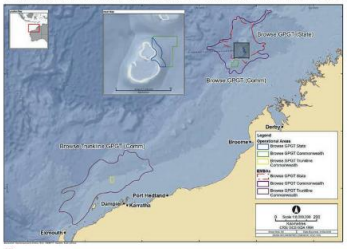
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www.woodside.com/what-we-do/consultation-activities

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'Worst nightmare': hunt for girl, 5, taken from her bed

Continued from Page 1

seen wearing a blue short-sleeve T-shirt with a white ring stripe around the end of the sleeves and black boxer-style underwear.

As the community braces for a possible worst case scenario, Northern Territory senator Jacinta Nampijinpa Price has called on anyone with information to come forward.

"To the community: this is the moment to step up. Someone knows something," she said. "Let's help bring her home."

She said the suspected abduction is "every parent's worst nightmare". "To her family, our thoughts are with you," she said.

Local Targeted Area Council president Maxine Carlton said the community was praying for a positive outcome.

"We are all distraught at what has taken place," she told the ABC. "We hope that there will be a light at the end of the tunnel and we find our granddaughter."

The incident is likely to put a greater focus on violence in NT town camps, where hundreds of predominantly Indigenous children live in multigenerational homes.

Police found items of interest in their search on Monday that are being examined by forensics officers to establish if they are relevant to the case. Several helicopters and a police thermal-imaging drone scoured Alice Springs for the little girl, as did police and volunteers on the ground.

Acting Commander Mark Grieve from NT Police Crime and Intelligence Command said Lewis is believed to have been "in the area" around the home of Sharon's disappearance and had been seen at the residence.

"He currently remains one of the few people who were in Old Timers camp at the time and who has not made themselves known to police, nor have police been able to locate him at this point in time," he said. "Police can confirm he has recently been released from prison and is the subject of no conditions."

Commander Grieve said police did not believe Lewis had access to a vehicle.

"We're hoping that he's still in the immediate area and, if he's involved, we certainly hope that no harm has come to Sharon," he said.

Lewis pleaded guilty in March last year while in prison to resisting police and a separate count of breaching a domestic violence order. He was sentenced to three months in prison.

In 2022 he served eight months in prison for aggravated assault but breached a 12-month good behaviour bond while on parole.

Sharon is from a large and well-known Central Australian family. The patriarch is prominent Walpiri elder Robin Japanangka Granites, an interpreter and cultural authority. Her extended family includes acclaimed desert artists.



NT Police hold concerns for Sharon Granites' welfare

Macca's to build on 'coolest street'

TIA CLARKSON-PASCOE

One of Melbourne's trendiest streets is set to receive a 24/7 McDonald's restaurant after the fast-food conglomerate won an appeal in Victoria's administrative tribunal.

The fast food giant fought back against Darebin City Council's decision blocking construction of a McDonald's restaurant in Melbourne's inner north.

The planning permit applies to the land on High Street in Northcote which was declared the "coolest street" by Time Out magazine in 2024.

The Victorian Civil and Administrative Tribunal (VCAT) ultimately ruled in favour of the fast food chain despite the council's many points of issues submitted to the court.

The council opposed the planning permit, saying the "large-format fast-food outlet will materially alter the look, feel, and identity of the precinct".

It also raised concerns about the environmental impacts, potentially negative effect on property prices, and the increase of traffic and congestion in the area.

A petition to "stop McDonald's from opening in Northcote" gained more than 11,300 signatures from people concerned the street, renowned for its "local charm and community-based spirit", would be "overshadowed" by the 24/7 outlet.

There are already two existing McDonald's stores within a 3.6km radius of the proposed site of 319-325 High Street.

However, VCAT member Michael Deidun said he could not refuse the application based purely on who intended to occupy the site.

"This tribunal does not have the power to review the corporate approach of McDonald's, its work practices and ethics, the type of food it produces, its impact on human health, or whether it fits the 'cool' vibes of its context," he said.

A McDonald's spokesperson said the appeal was "fairly and rightly assessed on its merits".

"The restaurant will be owned and operated by a local franchisee, who will contribute to the local area through employment, access to training and development opportunities, and supporting local community organisations," the spokesperson said.

"We look forward to joining Northcote and playing an active role in the local community."

NEWSWIRE

30 years since Port Arthur 'horror'

JOSEPH OLBRYCHT-PALMER

Anthony Albanese has deplored the "unspeakable horror" of the Port Arthur Massacre, as Australia marks 30 years since its worst mass shooting.

Martin Bryant shot dead 35 people and wounded a further 23 in a violent rampage across the Tasmanian tourist hotspot of Port Arthur on April 28, 1996.

The attack prompted snap gun laws outlawing semi-automatic and pump-action shotguns, heavily restricting firearm licences, and rolling out a national buyback scheme that destroyed more than 650,000 firearms.

"Thirty years after the Port Arthur massacre, the horrible injustice of that day remains beyond understanding," the Prime Minister said in a statement.

"Australia pauses today to remember the 35 people whose lives and futures were so pitilessly stolen from them just because they happened to be there.

"We think of everyone whose world was shattered by the loss of those who had been the bright centre of their lives, their love left desperately wrapped around an absence."

Among those killed were six-year old Alannah and three-year old Madeline Mikac.

Bryant, fleeing the historic grounds of Port Arthur, stopped where the young girls were walking with their mother, Nanette.

He fatally shot Ms Mikac and Madeline before gunning down Alannah as the older daughter ran away.

Left widowed and childless, Walter Mikac led the charge for gun reform in the wake of the massacre and co-founded The Alannah and Madeline Foundation to support child victims of violent crimes.

Reflecting on "the extraordinary courage that emerged from shattering grief", Mr Albanese praised Mr Mikac for championing "his devastating loss into a call for national action on gun reform, writing to then prime minister John Howard with a message that echoes through the decades: 'Be strong, act now'."

Bryant, now 58, is serving 35 life sentences at Hobart's Risdon Prison.

NEWSWIRE

04.27.2026 20:08 NewsCorp Australia – Tearsheet

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6.3.2 The West Australian – 28 April 2026

State gripped by a month of carnage

BROOKE ROLFE & KIRSTY LICHTENSTEIN

The carnage on WA roads has continued with two young girls dying in hospital 10 days after a car they were travelling in slammed into a tree, while two women were killed in separate crashes on the weekend.

The two girls, aged three and four, died in Perth Children's Hospital on Sunday. They were passengers in a Ford Territory that left the road on Muriel Street, Viveash, and hit a tree on April 17.

The 24-year-old male driver and a 24-year-old female passenger were taken to Royal Perth Hospital with serious injuries.

Also on Sunday, a 36-year-old woman was killed when her Holden Statesman sedan left Spencers Brook Road near Burlong Park, about 95km east of Perth, and hit a tree about 5.30pm.

An hour later, an 80-year-old woman was hit by a Kia Rio hatchback outside a tavern on Blanche Street in Gosnells. According to police, the woman was crossing George Street when she was hit.

Bystanders and police provided first aid to the woman before she was taken to Fiona Stanley Hospital, where she later died from her injuries.

All three crashes are under investigation and police are appealing for any witnesses or anyone with dashcam footage to contact Crime Stoppers.

The latest deaths bring the number of fatalities to more than 60 so far this year, after an Easter school holiday period during which three people were killed in a single day.

At this time last year, 69 people had died on roads.

DEADLY MONTH ON WA ROADS

APRIL 2
Bedfordale – 14yo Jaxxon Brinkworth (pictured)

APRIL 2
Jarrahdale – 30yo man
Derby – 18yo woman

APRIL 26
Burlong Park – 36yo woman
Gosnells – 80yo woman
Viveash – 3yo girl and 4yo girl after April 17 crash



On April 2, 14-year-old Jaxxon Brinkworth was killed when his dirt-bike collided with a Ford F150 utility on Albany Highway, in Bedfordale, about 4.25pm.

Minutes later, a 30-year-old man lost control of his Harley-Davidson motorcycle while riding on a remote stretch of road on Kingsbury Drive in Jarrahdale. He died at the scene.

Hours later, an 18-year-old woman was killed during a late-night drive in the mudflats near Rowan Street, in Derby, after the 19-year-old driver lost control of his Nissan Patrol and rolled.

The devastation prompted Road Policing Commander Mike Peters to issue a plea to drivers to stay safe.

"Every decision made behind the wheel matters," he said.

"Those decisions determine whether you arrive home safely or whether police are left delivering devastating news to a family. That responsibility must be taken seriously by every driver."

Dr TikTok is in the house

Australian parents are increasingly turning to social media and AI-powered tools for health advice to support their physical and mental wellbeing, as the cost of living and time pressures make traditional care harder to access.

Research reveals social media is the go-to for parents, who are more likely than non-parents to trust, act on, and even spend money based on health content they view online that can lead to adverse health outcomes with no clinical oversight.

Three in 10 parents have bought a health product influenced by online content.

Tax time alert for online tips

The Australian Taxation Office is warning the community to be wary of incorrect or misleading information this tax time, particularly claims promising greater refunds, shortcuts or hacks. The ATO says there is a rise in tax-related content and "tips" being shared — especially online — and is urging taxpayers to treat unverified advice with caution. ATO Assistant Commissioner Anita Challen says Australians should think twice before acting on information from third-party sources.

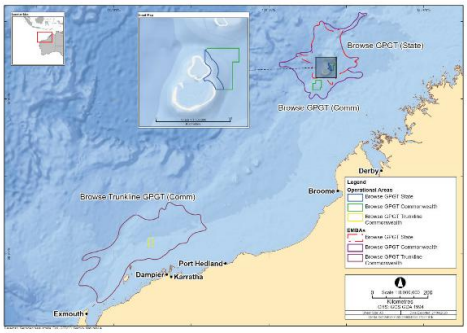
Browse to NWS Project Geophysical and Geotechnical Surveys Environment Plans

(Commonwealth and State)

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6.3.3 National Indigenous Times – 28 April 2026

20 NIT THE INDIGENOUS BUSINESS REVIEW theibr.com.au

Steering a new pathway

NATASHA CLARK

Kimberley Agricultural Pastoral Company has sold its first steers since transitioning from bulls in 2024, with the cattle shipped to Malaysia and Indonesia this month aboard early-season live export vessels.

The 100 per cent Indigenous-owned company, operating across four cattle stations in WA's Kimberley region, was able to capitalise on the first export ships of the season, with steers prepared for sale in higher, drier country benefiting from all-weather road access.

While cattle producers across the Northern Territory are currently constrained by wet season conditions and limited transport access, Kimberley producers with reliable roads have benefited from strong demand and competitive pricing as high-volume export buyers seek to fill ships.

Leading hand Ivan Watson said the transition from bulls to steers has opened new opportunities for the company.

"It feels great that this has happened, and thanks to the change from bulls to steers, we have opened up whole new domestic and international markets—a stepping stone to bigger things for KAPCO," Mr Watson told National Indigenous Times.



KAPCO crew. Picture: KAPCO

"Not just because of the market, but because it also creates further employment opportunities for Indigenous people who are looking to excel in the industry and use KAPCO as a stepping stone to further opportunities in their lives."

The steers were sold from Myroodah Station, which is about 150km from Derby, where KAPCO runs a herd of brahman, droughtmaster, and shorthorn cattle primarily for the live export market.

Shorthorn-cross cattle are also processed under the company's own brand, KAPCO Beef, which is sold in supermarkets across the Kimberley region.

KAPCO is expected to turn off about 4500 head this year.

Fellow leading hand Cheyden Dolby said conditions were tough but rewarding.

"It was dusty and extremely hot at this time of year, and we camped out to get the job done — it was a great feeling to see those trucks roll out full of fat steers," he said.

Mr Dolby emphasised the value of the team environment and said he relished seeing growing opportunities for young Aboriginal workers.

"I really enjoy working for KAPCO and leading a close-knit team. It is great to see more young Indigenous people join KAPCO each year," he told National Indigenous Times.

Note: KAPCO chair Wayne Bergmann is a co-owner of National Indigenous Times.

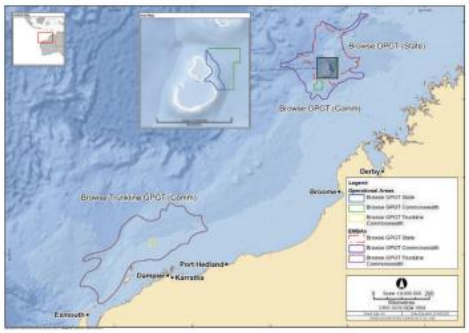
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6.3.4 Pilbara News – 29 April 2026

Pilbara NEWS
Wednesday, April 29, 2026



A man was rescued off Picard Island after his inflatable dinghy broke anchor.

Rescue reminder

SOPHIE GANNON

Police have found and rescued a severely dehydrated man who went on a solo snorkelling mission kilometres off the north-west coast of WA.

Officers aboard a charted search plane spotted the man in knee-deep water late on Friday, April 17 — several hours after his family had alerted authorities that he had failed to return from a planned solo boating and camping trip to Picard Island.

The 28-year-old man had set off in a 3.3m inflatable dinghy and had been snorkelling about 5km from the island when his vessel broke anchor, leaving him stranded.

He tried to swim to another nearby island and spent several hours in the water before eventually reaching land, where he remained until he was picked up by a commercial fishing vessel, which was nearby and was able to be directed to the scene.

Officers from Roebourne and Karratha were assisted by Volunteer Marine Rescue crews, along with commercial and private vessels.

The multi-agency search from the skies was coordinated by the water police coordination centre in North Fremantle, with support from the Pilbara police district, WA Police emergency operations unit and police air wing.

The man was taken to Point Samson, where St John WA paramedics treated him for severe dehydration.

In a statement on Sunday police reminded skippers to always plan ahead before heading offshore, monitor weather and tide conditions, carry essential safety equipment including lifejackets, an EPIRB, flares and a first-aid kit, maintain reliable communication, and inform others of their travel plans and expected return time.

Pluto LNG Facility update



As operator of the Pluto LNG Facility, Woodside's priority is safe and reliable operations.

Woodside advises it will be undertaking planned maintenance at the Pluto LNG Facility in the coming weeks, which may result in increased flaring with the potential for dark smoke during some of the maintenance period. Flaring is essential for the safe operation of a gas plant and is required during some maintenance activities.

Woodside closely monitors and aims to minimise its flaring as part of normal operations.

If you would like further information on these activities, scan the QR code below or call Woodside's Community Line on 1800 634 988.

Woodside Energy

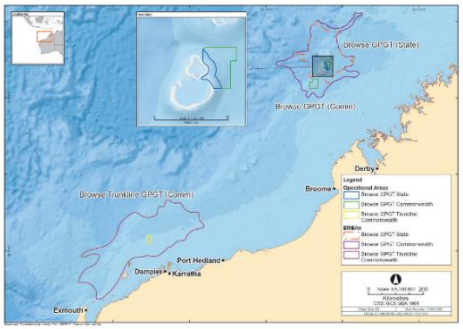
Browse to NWS Project Geophysical and Geotechnical Surveys Environment Plans

(Commonwealth and State)

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 and State Environment Plans.

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- **Browse to NWS Project Geophysical and Geotechnical Surveys** – a Commonwealth Environment Plan for survey work in the vicinity of the Torosa, Calliance and Brecknock gas fields.
- **Browse to NWS Project Geophysical and Geotechnical Surveys** – a State Environment Plan for survey work in the vicinity of the Torosa, Calliance and Brecknock gas fields.
- **Browse to NWS Project Trunkline Geophysical and Geotechnical Surveys** – a Commonwealth Environment Plan for survey work in the vicinity of the proposed trunkline.



Environment that May Be Affected (EMBA)

The EMBA is the largest geographic area where an unplanned event could potentially have an environmental consequence. In the highly unlikely event a hydrocarbon release does occur, the whole EMBA would not be affected.

We would like 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 would like to hear from you by **28 May 2026.**

feedback@woodside.com
Toll free: 1800 442 977
woodside.com

To find out more go to: www.woodside.com/what-we-do/consultation-activities
You can also subscribe via our website to receive future information on upcoming activities.

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6.3.5 Kimberley Echo – 30 April 2026

6 NEWS kimberleyecho.com.au Thursday, April 30, 2026

Voices of the region part of committee

PHOEBE SOLON

The State Government says the Kimberley will have stronger representation in WA's justice reform efforts after new appointments to the Aboriginal Justice Advisory Committee.

Twelve Aboriginal leaders from across the State have been added to the committee which provides independent cultural advice to the Department of Justice, helping shape policies and services that better reflect the lived experiences of Indigenous people, particularly in regions such as the Kimberley.

Attorney-General Tony Buti said the cultural knowledge and experience of Aboriginal communities was essential in building a fair, safe, and just system for everyone.

"By embedding Aboriginal voices into decision-making, we can strengthen trust in the justice system and deliver lasting, meaningful change," he said.

Among the appointees is Jean O'Reeri, a Ngarinyin woman from Karunjie Station on the Gibb River Road.

She has lived and worked in Wyndham since the 1960s, dedicating decades to community advocacy and supporting young people. With more than 40 years experience as an Aboriginal teaching assistant, she has also contributed to Aboriginal corporations and medical services across the region.

Dylan McCarthy, also representing the West Kimberley, is a Gooniyandi, Gija and Bardi man with strong ties to Ardyaloon Community and Fitzroy Crossing.

Born in Derby, he has worked in mining, health and community services, and now supports Aboriginal engagement at Legal Aid WA.

The AJAC has identified five strategic priority areas: young people; safe housing and homelessness; Aboriginal workforce development and employment; procurement and Aboriginal community controlled organisations; and prevention of deaths in custody.

WA Aboriginal Affairs Minister Don Punch said he was pleased with the committee's strong regional representation.

"It is pleasing to see strong regional representation on AJAC so that decisions about policy development are shaped by Aboriginal people who understand what's happening in their own communities and can advocate for place-based approaches to shape a more responsive and culturally informed justice system," he said.



Newly appointed committee member Jean O'Reeri of Wyndham. Picture: Kelsey Reid

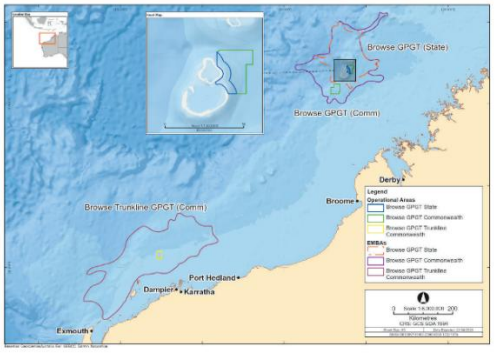
Browse to NWS Project Geophysical and Geotechnical Surveys Environment Plans

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6.3.6 Broome Advertiser – 30 April 2026

10 NEWS broomead.com.au Broome Advertiser Thursday, April 30, 2026

Croc attacks sleeper in swag

BROOKE ROLFE

A young man was asleep in his swag when he was attacked by a 3m saltwater crocodile at a remote camping location in WA's north.

The man, in his 20s, survived being mauled at a beach beyond the Coulomb Point Nature Reserve, beside Hidden Creek, about 50km north of Broome.

He was taken to Broome Hospital after the early-morning attack on April 18 before being flown by the Royal Flying Doctor Service to Perth the following day, where it is understood he underwent surgery at Royal Perth Hospital.

His injuries are described as significant but not life-threatening.

The man, who opted to conceal his identity, said he wanted to focus on his recovery rather than the details of the attack.

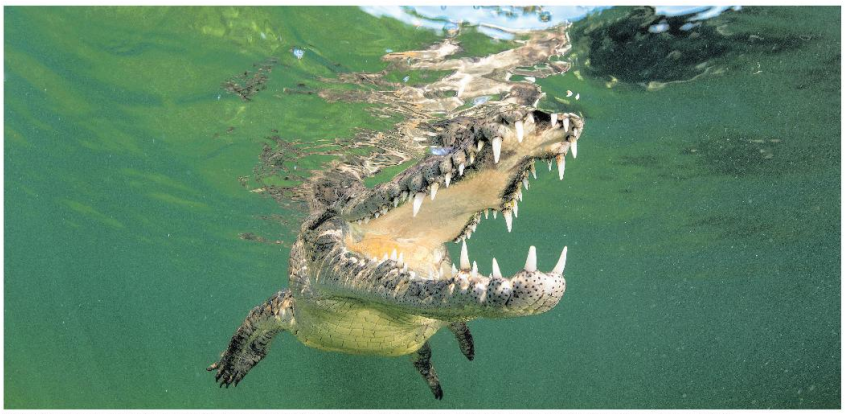
I would like to take this opportunity to thank everyone for their messages of concern over the past few days," he said in a statement.

"I am grateful for the well wishes as I recover from my injuries.

"I would like to give particular thanks to my friends and family who were there to help and support me when I needed it most.

"I would also like to offer my sincere gratitude to the staff at Broome Hospital and the Royal Flying Doctor Service for the treatment and care they provided while preparing me for my journey to Royal Perth Hospital."

He said he would be concentrating on his recovery and return to regular life.



Saltwater crocodiles are the world's biggest reptile and are responsible for most crocodile attacks in northern Australia. Picture: Adobe

It is understood people nearby may have seen the attack which unfolded near a remote stretch of the unsealed Manari Road on the Dampier Peninsula.

The spot is well known among residents and visitors for its long, untouched beaches, tidal creeks, and pindan vegetation that can survive in the red, sandy plains.

The Department of Biodiversity, Conservation and Attractions is investigating the crocodile attack, and intends to visit the site, as well as speak with the injured survivor.

However, tidal conditions in the Kimberley have made the beach temporarily inaccessible.

It is the second reported crocodile attack in the region this year.

In January, a man suffered lacerations after an encounter with a 3m saltwater crocodile near the remote La Djardarr Bay Community. Another man was attacked in 2024 by a 3m saltwater crocodile while spearfishing off the coast of nearby One Arm Point.

Saltwater crocodiles are common along the Kimberley coastline and are known to inhabit beaches, creeks and tidal waterways.

They are the world's biggest living reptiles and are responsible for most crocodile attacks in northern Australia.

The DBCA has warned people to be vigilant along the Kimberley Coast and at all water bodies across northern Australia, including estuaries, tidal rivers, river pools, and the waters near offshore islands.

The Parks and Wildlife service should be contacted if a crocodile makes an approach, shows aggressive behaviour, poses a risk to public safety, or if people are seen interfering or interacting with crocodiles.

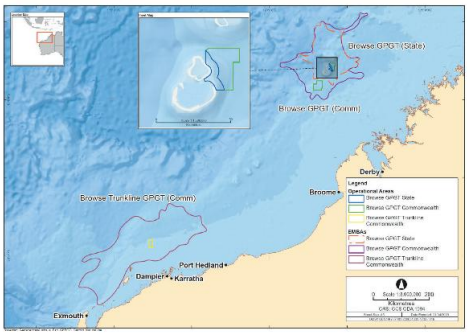
Browse to NWS Project Geophysical and Geotechnical Surveys Environment Plans

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6.3.7 Koori Mail – 6 May 2026



Dancers performing at the healing ceremony. *All pictures: Ali Mc*



Children and attendees come together around the fire for the closing dance.

● continued from previous page

"I've experienced racism when I was in primary school, when I was in high school and playing football, and after football. That's something that just seems to always be there."

In 2021, Lovett-Murray and Winmar produced a documentary about racism in sports, *The Ripple Effect*, and established a schools education program called 'Point and be Proud'.

"It was about him and other Indigenous and multicultural athletes that have been through racism and the impact it had on their mental health and wellbeing," he said.

"We were going into schools and showing that documentary and having discussions with the students: If you're racist, what is the impact on that person's mental health and well being?"

He said the impact of racism on First Nations children and young people was severe, and that more needed to be done to eradicate racism and support better mental health.

"We hear stories of young Aboriginal kids committing suicide because of racism," he said. "That's the worst case scenario, but it's something that I believe that we've got to keep educating the younger ones on."

He said it was important that ceremonies like Ngarra Jarra Noun continued as part of the healing and to contribute to cultural strength and pride.

"Those ceremonies, it's something that we've done for many hundreds, thousands of years," he said.

"A big reason why we are the oldest culture in the world is because these ceremonies, these songs, these dances, they're passed down from generation to generation."



Aunty Reio Ellis from Grandmothers Against Removals (GMAR) with her grandchildren.



Nathan-Lovett Murray, from Indigenous Sports Network, organiser of Ngarra Jarra Noun Healing Ceremony.

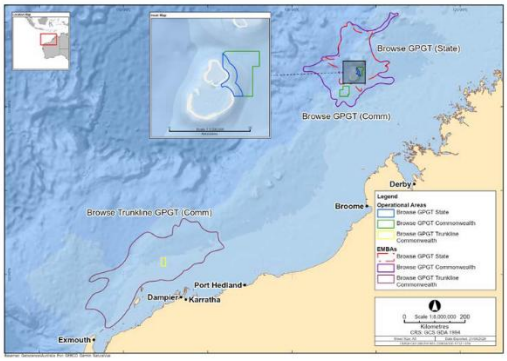
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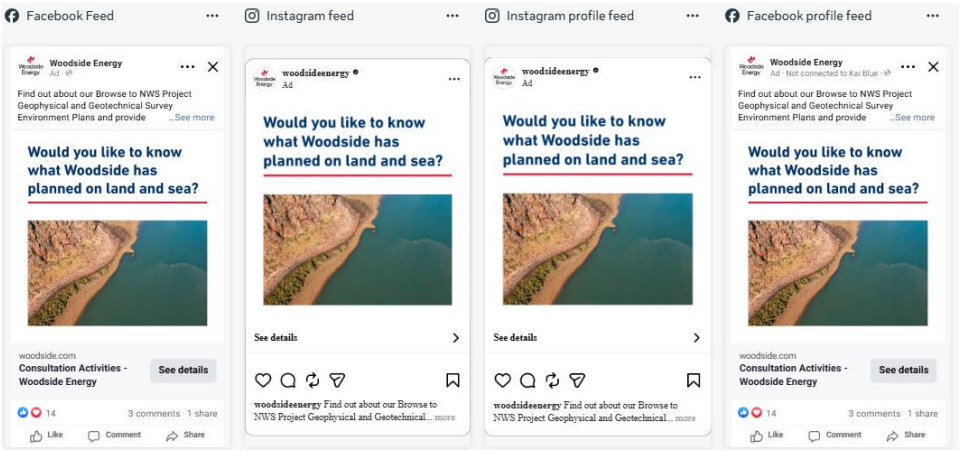
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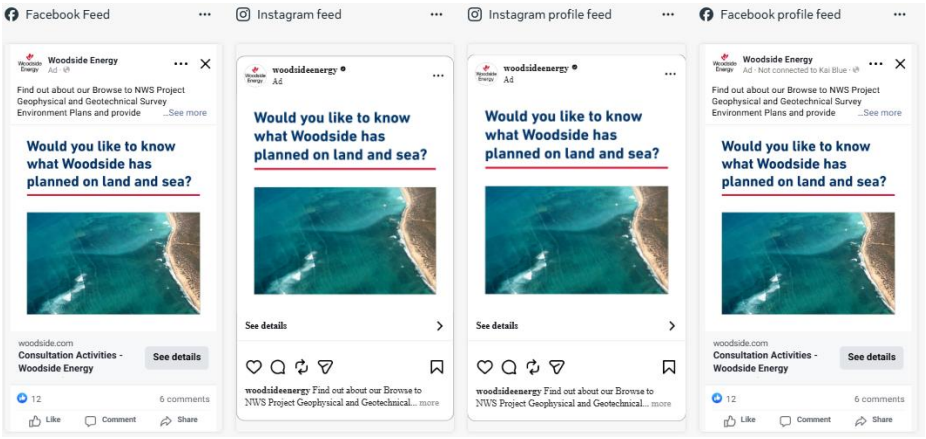
6.4 Social media

6.4.1 Social media EP targeted campaign

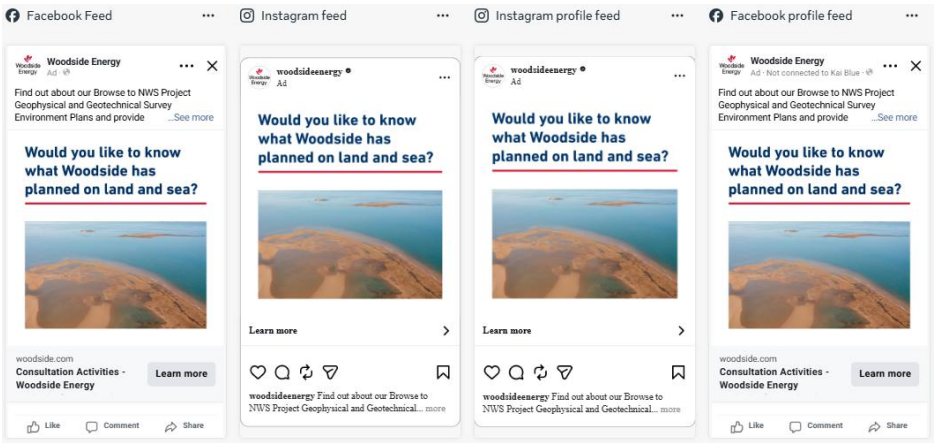
Tile design 1



Tile design 2



Tile design 3



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6.5 Community information sessions

The community information sessions that Woodside has conducted are captured below:

6.5.1 Pilbara Region

6.5.1.1 KDCCI Markets at REAF – 15 May 2026

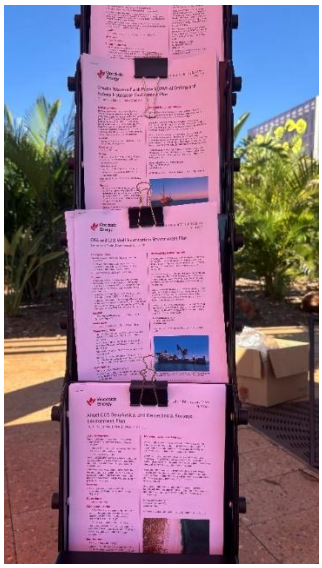
Location	Dampier
Activity	KDCCI Markets at REAF
Date	15 May 2026
Description of the consultation	Woodside hosted a stand at the Karratha District Chamber of Commerce (KDCCI Red Earth Arts Festival (REAF) markets, a community event bringing together local businesses selling local products, a variety of food vendors and community groups and performances. The stand was staffed by members of Woodside's Corporate Affairs and Environment teams. Woodside displayed a QR code on a banner at the stand linking to the 'Consultation activities' page of the Woodside website. Woodside displayed and made available printed Consultation Information Sheets on the Browse to NWS Project GPGT Surveys EP.
Advertising and invitations	Over 500 community members attended the event.
Estimated number of individuals consulted	Woodside spoke to many community members, recording 10 conversations.
Summary of Feedback, Objection or Claim	
• Queries around employment opportunities. • General interest in the Scarborough Energy Project progress and Pluto Train 2 and Train 1 modifications projects. • General interest from Woodside employees around the Browse to NWS Project. • Patrons shared their views on future of gas in the energy transition and how this compares to alternative power options; solar and nuclear. • Interest in Woodside's supply of DOMGAS to WA. • EP community consultation and approval process discussed and why we want to talk to community. No concerns raised. • Discussions with children about what Woodside does and where gas comes from. • Pleasant interactions with Woodside, Woodside contractor companies and near neighbour employees.	
Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	
Whilst feedback was received, there were no objections or claims. The participation in the market was 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 3.2).	

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Evidence of promotion and event

Advertisement **Pilbara News – 13 May 2026**	**Social media** **Woodside North West Facebook post** **15 May 2026**
	
Advertisement **IGA Good Grocer notice board – 12 May 2026**	**Advertisement** **Karratha City Plaza notice board – 12 May 2026**
	

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Advertisement **Lo's Cafe, Karratha community notice board 12 May 2026**	**Event presence** **Banner at event – 15 May 2026**
	
Event presence **Consultation Information Sheets at event**	**Event presence** **Consultation Information Sheets at event**
	

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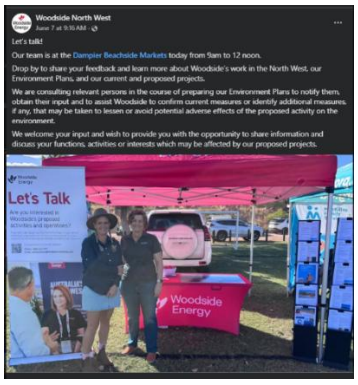
6.5.1.2 Dampier Beachside Markets – 7 June 2026

Location	Dampier
Activity	Dampier Beachside Markets
Date	7 June 2026
Description of the consultation	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. The stand was staffed by members of Woodside's Corporate Affairs team. Woodside displayed a QR code at the stand linking to the 'Consultation activities' page of the Woodside website. Woodside displayed and made available printed Consultation Information Sheets on the Browse to NWS Project GPGT Surveys EP.
Advertising and invitations	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: • An advertisement published in the Pilbara News on 3 June 2026. • A social media post via Woodside North West Facebook account advising that Woodside would be in attendance at the event on 7 June 2026 • A social media post via Dampier Beachside Markets - DCA Facebook account advising that Woodside would be in attendance at the event on 4 June 2026 • An advertisement displayed on community noticeboards at Lo's Karratha on 26 May 2026 • An advertisement displayed on community noticeboards at Lo's Karratha, and IGA Good Grocer Karratha on 26 May 2026 • An EP consultation display with QR code (linked to the 'Consultation activities' page on Woodside's website) displayed at Woodside's stand. • EP consultation banner with QR code (linked to 'Consultation activities' page on Woodside website), displayed at Woodside's stand along with current EP consultation information sheets (see table below)
Estimated number of individuals consulted	Over 1000 community members attended the event. Woodside spoke to many community members, recording 20 conversations.
Summary of Feedback, Objection or Claim	
• Queries around employment opportunities. • Discussion around flaring, why Woodside flares, informing community abour upcoming flaring activity. no concerns raised - neutral sentiment. • General interest in the Scarborough Energy Project progress and Pluto Train 2 and Train 1 modifications projects. • General interest from Woodside employees around the Browse to NWS project. • General interest in Bass Straight activities. • Patrons shared their views on future of gas in the energy transition. • Environment Plan community consultation and approval process discussed and why we want to talk to community. No concerns raised. • Discussions with children about what Woodside does and where gas comes from. • Pleasant interactions with Woodside, Woodside contractor companies and near neighbour employees.	
Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	
Whilst feedback was received, there were no objections or claims. The community information sessions were part of Woodside's broader consultation approach to enable self-identification and provide relevant persons with the opportunity to assess any impacts on their functions, interests or	

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activities, and provide feedback on proposed activities, which is consistent with the intended outcome of consultation (see Section 5.2 of this EP).

Evidence of promotion and event

Advertisement **Pilbara News – 3 June 2026**	**Advertisement** **Karratha City Plaza Notice Board**
	
Advertisement **IGA Good Grocer notice board – 26 May 2026**	**Social Media** **Woodside North West Facebook post** **7 June 2026**
	
Advertisement **Lo's Café – 26 May 2026**	**Event presence** **Banner at event – 7 June 2026**
	

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6.5.1.3 Waramalgu Markets with Cora-Larni Enterprises – 6 July 2026

Location	Roebourne
Activity	Waramalgu Markets with Cora-Larni Enterprises
Date	6 July 2026
Description of the consultation	Woodside hosted a stand at the Waramalgu Markets with Cora-Larni Enterprises, a City of Karratha community event in Roebourne as part of NAIDOC Week which brings together local businesses selling local products, a variety of food vendors and community groups and features performances. The stand was staffed by members of Woodside's Indigenous Affairs, Corporate Affairs and training partner, Programmed. Woodside displayed and made available printed Consultation Information Sheets on the Browse to NWS Project GPGT Surveys EP.
Advertising and invitations	Woodside advertised the event as a broader invitation to attend and discuss Woodside operations and projects via a social media post on the Woodside North West Facebook account.
Estimated number of individuals consulted	Event organisers estimated over 250 community members attended the event. Woodside spoke to many community members, recording 10 conversations.
Summary of Feedback, Objection or Claim	
• Queries around jobs, apprenticeships and traineeship opportunities. • Interest in Scarborough Energy project and Browse to NWS Project concept. • NAIDOC and what this means to community. • General Woodside awareness. • Future of energy security. • Social investment in Roebourne, how does Woodside direct funding? • No questions/discussions on Environment Plans.	
Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	
Whilst feedback was received, there were no objections or claims. The community information sessions were part of Woodside's broader consultation approach to enable self-identification and provide relevant persons with the opportunity to assess any impacts on their functions, interests or activities, and provide feedback on proposed activities, which is consistent with the intended outcome of consultation (see Section 5.2).	

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Evidence of promotion and event

Social media **Woodside North West Facebook – 6 July 2026**

Woodside stand displaying Consultation Information Sheets


6.5.1.4 FeNaCING Festival – 1 to 2 August 2026

Location	**Karratha**
Activity	FeNaCING Festival
Date	1 to 2 August 2026

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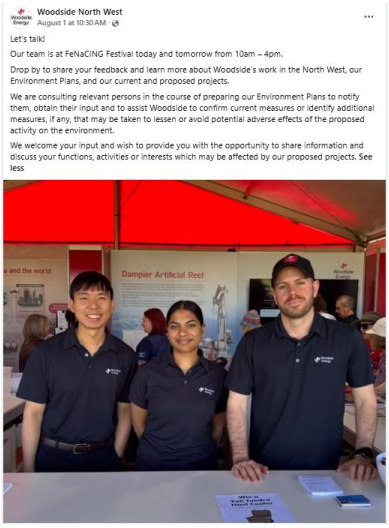
Description of the consultation	Woodside hosted a stall at the FeNaCING Festival, Karratha, to engage community members on Woodside activities. The stand was staffed by Woodside representatives including from Environment and Corporate Affairs teams. Information was available on Woodside's activities in the north-west region and information sheets on flaring and marine seismic surveys were on display. Woodside displayed and made available printed Consultation Information Sheets on the Browse to NWS Project GPGT Surveys EP.
Advertising and invitations	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: (see evidence table below) • An advertisement published in the Pilbara News on 29 July 2026 edition • A social media post via Woodside North West Facebook account advising that Woodside would be in attendance at the event on 1 August 2026 • A social media post via FeNaCING Festival Facebook account advising that Woodside would be in attendance at the event on 30 July 2026 • An advertisement displayed on community noticeboards at Lo's Karratha on 28 July 2026 • An advertisement displayed on community noticeboards at IGA Good Grocer Karratha on 29 July 2026 • An EP consultation display with QR code (linked to the 'Consultation activities' page on Woodside's website) displayed at Woodside's stand.
Estimated number of individuals consulted	Over 10,000 community members attended the event. Woodside spoke to many community members, over 1,100 engaged in a Woodside quiz, recording approximately 100 meaningful conversations.
Summary of Feedback, Objection or Claim	
• Interest in local jobs, training opportunities and local procurement opportunities. • Interest in Woodside's social contribution activities in City of Karratha. • Conversations about Woodsides flaring activities. • Conversations about Woodside's approach to cultural heritage management. • Query about Woodside's tax contribution. • Conversation about Woodside's approach to the energy transition and energy security. • Interest in industry's political influence. • General conversations about Woodside's activities in Western Australia, including the North West Shelf and Scarborough Energy Project, Pluto Train 2 and Pluto Train 1 modifications. • Questions relating to the current status of the Browse to North West Shelf concept and considerations for Scott Reef. • How and why Woodside develops EPs and the EP approval process. • General interest in Woodside's health, safety and environmental management measures and mitigations, particularly in relation to seismic activities and potential impacts to fauna. • Discussions with children about what Woodside does and where gas comes from.	
Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	
Whilst feedback was received, there were no objections or claims. The participation in the festival was part of Woodside's broader consultation approach to enable self-identification and provide relevant persons with the opportunity to provide feedback for Woodside to consider in developing its EP. Feedback received is assessed to assist in identifying appropriate measures in response to the feedback so that the activity may be carried out in a manner in which the impacts and risks of the activity will be reduced to ALARP and will be of an acceptable level, consistent with the intended outcome of consultation (see Section 5.2 of the EP).	

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Evidence of promotion and event

<table>
<tr><th>Advertisement
Pilbara News – 29 July 2026</th><th>Social media
FeNaCING Festival Facebook page
1 August 2026</th></tr>
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<tr><th>Consultation Information Sheets at event</th><th>Consultation Information Sheets at event</th></tr>
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Banner with QR code at event	Woodside marquee
	
Woodside North West Facebook 1 August 2026	**Promotional poster at Lo's Café Karratha 28 July 2026**
	

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Promotional poster at BP service station Karratha 29 July 2026	Promotional poster at IGA Good Grocer Karratha
	

6.5.1.5 Passions of the Pilbara – 8 August 2026

Location	Onslow
Activity	Passions of the Pilbara
Date	8 August 2026
Description of the consultation	Woodside hosted a stand at the Passion of the Pilbara Festival to engage community members on Woodside activities. The stand was staffed by Woodside Operations and Corporate Affairs representatives. Information was available on Woodside's activities in the Onslow region and information sheets on marine seismic surveys were also on display. Woodside displayed and made available printed Consultation Information Sheets on the Browse to NWS Project GPGT Surveys EP.
Advertising and invitations	Woodside promoted the market stall on its North West Facebook page.
Estimated number of individuals consulted	Over 500 community members attended the event. Woodside spoke to many community members, recording approximately 30 conversations.
Summary of Feedback, Objection or Claim	
• General queries about Woodside's footprint in Onslow, including Macedon Gas Plant (operator) and Wheatstone LNG (non-operator) • Interest in Woodside's social contribution activities in Onslow and broader region and potential support for family support services. • General conversations about Woodside's activities in Western Australia, including the North West Shelf. • Questions relating to the current status of the Browse project. • General interest in job and training opportunities. • General interest in the role of gas in supporting energy security. • General interest in Woodside's approach to health, safety and environmental management.	
Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	
Whilst feedback was received, there were no objections or claims.	

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Presence at the Festival was 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).

Evidence of promotion and event

Social media
Woodside North West Facebook – 8.8.26



Consultation Information Sheets at event



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6.6 Community newsletters

6.6.1 Let's Talk – Our Plans, Your Say

6.6.1.1 Edition 7 – May 2026

Woodside Energy

Let's Talk

Our Plans, Your Say

Edition 7 | May 2026



Deep Orient vessel.

The rundown

Woodside crews aboard the Deep Orient vessel have wrapped up one of their most complex decommissioning campaigns to date, safely delivering the Deep Orient program in Western Australia's North West.

Decommissioning involves removing infrastructure that's no longer required. It's considered from the start of a project and is an ongoing consideration.

The Deep Orient activities spanned the Griffin and Stybarrow fields, as well as Echo Yodel, a subsea tieback to Goodwyn A. These assets stopped producing in 2009, 2015 and 2012 respectively.

Following the safe plugging and abandonment of the wells, crews on the TechnipFMC-operated vessel safely recovered a total of 4,000 tonnes of subsea infrastructure, including 73 kilometres of pipelines. That's around the distance from Woodside's Perth headquarters to Mandurah. They also recovered 37 subsea structures such as Xmas trees, buoys, wellheads and umbilical termination assemblies.

Our decommissioning program is among the largest in Australia. Reducing risk, applying lessons learned and continually improving how we work keeps us focused on safety, the environment and carrying out the work efficiently.

Our focus is also on reducing, reusing, recycling and treating materials before disposal is considered.

In 2025, crews completed a multi-year decommissioning program at the Enfield field, approximately 38 km north of the North West Cape, Western Australia. The program included plugging and abandoning 18 Enfield wells, recovering and deconstructing the Nganhurra riser turret mooring, and removing flexible flowlines, umbilicals and other subsea structures. The deconstruction of the Nganhurra riser turret mooring saw 99.6 per cent of materials reused, repurposed or recycled.

This marks Woodside's first complete lifecycle project, from exploration through development and operations to final decommissioning.

Upcoming engagement opportunities

Woodside is consulting with local community members at events, making it easy to speak to us about our operations, decommissioning activities and proposed projects.

If you're interested in what Woodside has planned on land and sea, come and chat to our friendly teams at the locations below, follow the Woodside North West Facebook page or email us at: **feedback@woodside.com**

You can meet us at:

- **KDCCI Markets at REAF**
  Friday, 15 May 2026,
  3 pm – 8 pm. The Quarter,
  20 Sharpe Avenue, Karratha,
  WA, 6714
- **Dampier Beachside Markets**
  Sunday, 7 June 2026,
  9 am – 12 noon. Hampton Oval,
  Dampier, WA, 6713
- **FeNaCING Festival**
  1-2 August 2026, 9 am – 4 pm.
  Bulgarra Oval, Karratha, WA,
  6714

Follow us on Facebook by **clicking here**



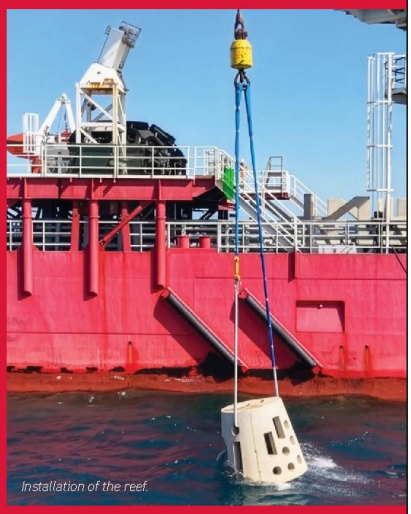
Come and speak to our friendly team.

To stay updated, subscribe for future editions at
woodside.com/what-we-do/consultation-activities

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Dampier fishers land a solid catch with new artificial reef

The bold vision of Woodside and Recfishwest to enhance marine life and recreational fishing in the Pilbara has become reality with the successful installation of an artificial reef off the coast of Dampier in north west Australia.



Installation of the reef.

The reef comprises 48 purpose-built concrete modules. They were carefully transported and installed in early December 2025.

The reef sits in some 35 metres of water, about 30 kilometres from the Dampier boat ramp. Over time, the site is expected to become a high-quality fishing location for species such as Spanish mackerel, cobia, emperor, cod and even sailfish.

Delivered with the support of the WA Government, the City of Karratha, Traditional Owners and local fishing clubs, the Dampier Artificial Reef represents a significant collaboration to provide an accessible and productive marine environment the community can enjoy now and in the future.

The installation of the reef was funded by Woodside and its Scarborough Joint Venture partners JERA Australia and LNG Japan. Woodside also acknowledges its Enfield Joint Venture partner, Mitsui E&P Australia, for contributing to the acquisition of the concrete modules.

As the reef establishes, we understand Recfishwest plans to share updates with local fishers, families and visitors who are set to enjoy a richer marine environment and better fishing in the years ahead.

Talking point

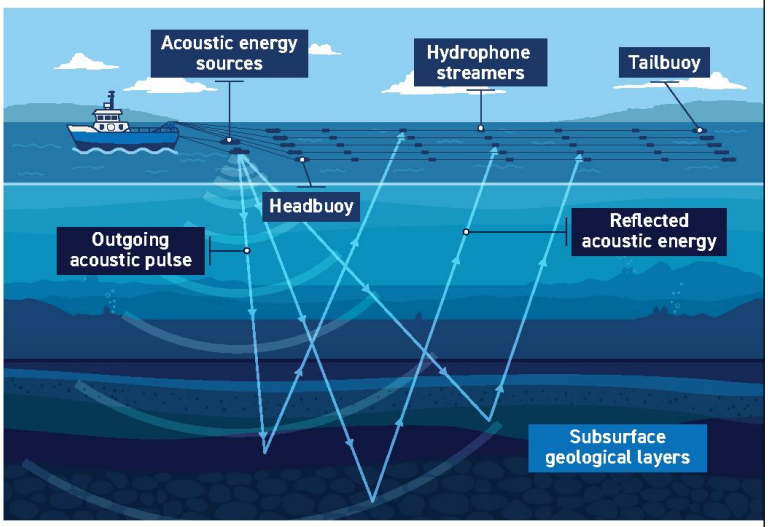
Pluto 4D M3 Marine Seismic Survey

Woodside's Pluto 4D M3 Marine Seismic Survey Environment Plan covers seismic survey activities in the Carnarvon Basin, north-west Australia, planned for late December 2026 to early February 2027, or the same period in the subsequent year.

Marine seismic surveys are a key technique used for geophysical exploration to understand what lies beneath the seabed, or subsurface. Woodside's seismic surveys are conducted under strict Australian and international regulations and management controls.

Marine seismic surveys are conducted by purpose-built survey vessels that tow specialised equipment placed in an array of long marine streamers. These vessels proceed at low speeds, typically around 4–5 knots (7.4–9.3 kilometres per hour), following predetermined sail lines to systematically map the survey area.

As the vessel moves, a sound source located at its rear releases compressed air as soundwaves into the water column at regular, short intervals. The soundwaves are reflected from subsurface rock layers to the water's surface, a bit like an echo. Sensitive microphones known as hydrophones, which are positioned within the streamers trailing behind the vessel, detect these soundwaves.



Alternatively, hydrophones and motion-sensitive sensors known as geophones can be embedded in small devices called ocean bottom seismic nodes, which are temporarily placed on the sea floor. The recorded sound is processed to generate images of subsurface structures, rock layers and other features for interpretation.

To learn more about marine seismic surveys, including methods that protect the marine environment, watch this video.



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Consultation opportunities

Environment Plan	Activity Type	Location	Consultation Dates
Minerva Decommissioning and Field Management (Commonwealth)	Decommissioning	~ 11 km south-southwest of Port Campbell, Victoria	May 2026
Minerva Decommissioning and Field Management (State)	Decommissioning	~ 11 km south-southwest of Port Campbell, Victoria	May 2026
Goodwyn Alpha Facility Operations	Operations	~ 138 km north-west of the town of Dampier, Western Australia	April-May 2026
Browse to North West Shelf (NWS) Project Geophysical and Geotechnical (GPGT) Surveys (Commonwealth)	Survey	~ 370 to 430 km north-northwest of Broome, Western Australia	April-May 2026
Browse to NWS Project GPGT Surveys (State)	Survey	~ 430 km north-northwest of Broome, Western Australia	April-May 2026
Browse to NWS Project Trunkline GPGT Surveys (Commonwealth)	Survey	~ 110 km north-west of Dampier, Western Australia	April-May 2026
CK4 and LH3 Well Intervention	Drilling	~ 135 km north-west of Dampier, Western Australia	April-May 2026

Under assessment (since previous edition)

Environment Plan	Activity Type	Month Submitted
Greater Western Flank Phase 4 Drilling and Subsea Installation	Development	April 2026
Pluto 4D M3 Marine Seismic Survey	Survey	March 2026
Angel Carbon Capture and Storage GPGT Surveys (Commonwealth)	Survey	January 2026
NWS Trunklines Operations (State)	Operations	November 2025
Pluto Trunkline Operations (State)	Operations	November 2025

Recently accepted (since previous edition)

Environment Plan	Activity Type	Date Accepted
Julimar-Brunello Plug and Abandonment	Decommissioning	April 2026
Pyrenees Facility Operations	Operations	February 2026
North Rankin Complex Facility Operations	Operations	January 2026
Goodwyn Alpha GPGT Surveys	Survey	January 2026
NWS Phase 1 Plug and Abandonment and TPA03 Well Intervention	Decommissioning	December 2025
OKHA Floating Production Storage and Offloading Facility Operations	Operations & Production	July 2025

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.

You can access our consultation information, provide feedback and subscribe for updates by **clicking here**



Right: Woodside employees keen to chat with community at the Ningaloo Sky Festival in Exmouth, WA.

You can view Commonwealth Environment Plans for approved activities and operations by visiting:
info.nopsema.gov.au/home/approved_projects_and_activities

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Carnaby's black cockatoos. Picture: Dean Arthurell.

Let's talk about... The Watheroo Biodiversity Project

Woodside's Watheroo Biodiversity Project is a collaborative effort to restore landscapes and support biodiversity in WA's northern Wheatbelt.

The project focuses on having positive biodiversity outcomes for habitats, threatened species and ecological function, through working with government agencies, non-government organisations, and local Indigenous and community groups.

As of December 2025, Woodside has planted approximately 5.5 million seedlings across 8,500 hectares in the Watheroo area. The land under reforestation in Watheroo is adjacent to a large area of conservation estate, the Watheroo National Park and connected reserves, as well as a significant area of remnant vegetation currently designated as unallocated Crown land. Together the combined area is over 130,000 hectares.

In addition to generating Australian Carbon Credit Units (for more information, click here), the plantings will provide additional habitat for fauna and create connectivity between these areas of remnant vegetation and conservation estate.*

One highlight of the Watheroo Biodiversity Project is the support for threatened Carnaby's black cockatoos. These large birds are under threat primarily from habitat loss due to historic land clearing. Together with not-for-profit conservation charity group Carnaby's Crusaders, numerous artificial hollows were installed in 2024 and 2025 to address a shortage of natural nesting sites because hollows large enough for the species to nest within typically only form in trees well over 100 years of age.

Additional programs within the project include a large-scale Light Detection and Ranging (LiDAR) survey to provide insight into the current status of the vulnerable malleefowl population in the region, motion detection camera fauna monitoring, annual bird surveys to track change within reforested areas, vegetation surveys to understand current condition of and stressors on remnant vegetation, and management of invasive species.

Woodside recognises that restoring biodiversity is a long-term commitment, and outcomes will continue to be monitored and reported transparently.

**All planting has been completed under the Carbon Credits (Carbon Farming Initiative) (Restoration by Environmental or Mallee Plantings - FullCAM) Methodology Determination 2024, which is authorised by the Carbon Credits (Carbon Farming Initiative) Act 2011.*

You can read more about Woodside's Biodiversity management and initiatives here.

Browse to North West Shelf (NWS) Project Geophysical and Geotechnical (GPGT) Surveys

Woodside has previously undertaken GPGT surveys in the Browse Basin as part of earlier project concepts. A series of new GPGT surveys are proposed to support potential future activities associated with the Browse to NWS Project.

Survey data is intended to inform the design and installation of the proposed trunkline, pipelines and umbilicals, subsea structures, and the mooring systems for the two proposed floating production storage and offtake (FPSO) facilities and mobile offshore drilling units (MODUs). Data may also contribute to assessments of existing infrastructure, support environmental and heritage studies, and assist in planning potential future project activities.

These surveys will be conducted across both Commonwealth and State waters and are organised into three Environment Plans. Woodside is consulting on these Environment Plans in April-May 2026. For more information, you can view the Consultation Information Sheets.

Browse to NWS Project GPGT Surveys (Commonwealth)

Browse to NWS Project GPGT Surveys (State)

Browse to NWS Project Trunkline GPGT Surveys

Join the conversation at **woodside.com/what-we-do/consultation-activities**

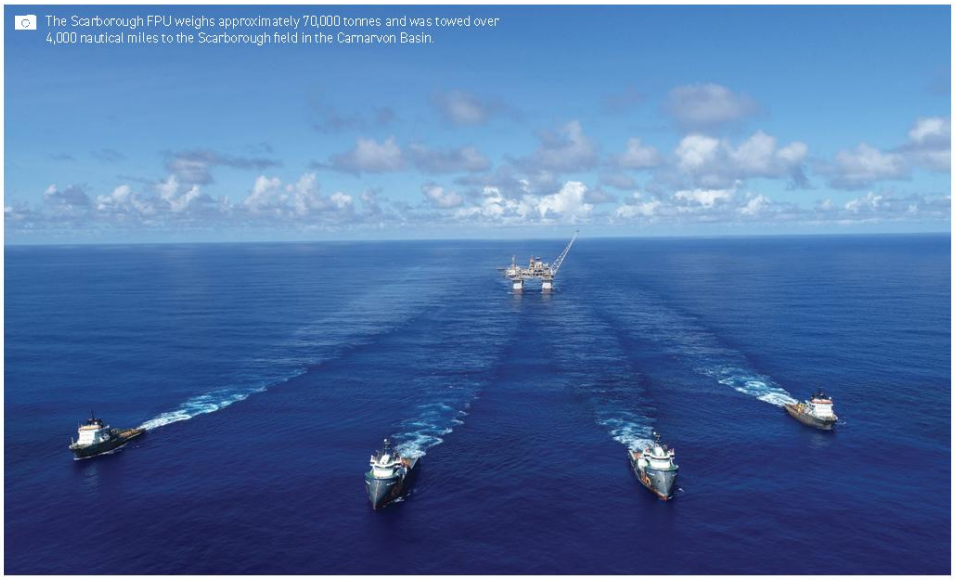
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6.6.2 Karratha Community Update

6.6.2.1 Edition Q1 – March 2026

Karratha Community Update

March 2026



The Scarborough FPU weighs approximately 70,000 tonnes and was towed over 4,000 nautical miles to the Scarborough field in the Carnarvon Basin.

Scarborough sails towards start up

This year marks a defining year for Woodside as the Scarborough Energy Project, including our Pluto Train 2 and Pluto Train 1 Modifications Projects in Karratha, move through final construction, commissioning and start up phases.

Across the Scarborough Energy Project, progress continues to track strongly toward first LNG cargo in the fourth quarter of 2026. The development is now more than 94% complete (excluding Pluto Train 1 modifications) and has already delivered economic benefits to the Karratha and Roebourne communities. Once operating, it is expected to support long-term energy supply for Western Australia and the wider Asia-Pacific region.

Offshore, a major milestone was achieved early this year with the safe arrival of the Floating Production Unit (FPU) at the Scarborough field, 375 km off the coast of Karratha. Hook-up and commissioning activities are underway in preparation for production.

Onshore, work at Pluto Train 2 remains focused on piping and electrical installation, system testing and commissioning, ahead of introduction of Scarborough gas to site later in the year.

Meanwhile, the Pluto Train 1 Modifications Project has ramped up. These modifications will enable the processing of additional Scarborough gas through our existing LNG train at Pluto LNG. New modules are expected to arrive through Dampier Port over the coming months.

Collectively, these projects represent the most significant investment in the region in more than a decade.

Together with our contractors, we've invested more than A$260 million with 200 Pilbara-based businesses. A$149 million of that figure has been invested with Pilbara-based businesses engaged on the Pluto Train 2 Project.

As we approach the finish line and a future with two trains operating at the Pluto LNG Park, we will continue to focus on managing impacts and delivering positive outcomes for the Karratha and Roebourne communities.

Mike Price
Woodside Vice President Pluto Scarborough Asset

Stay up to date on our continued contribution to the local community Woodside North West

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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.

Refreshed North West Shelf Visitor Centre

With the support of local Karratha contractors, last year the North West Shelf (NWS) Project Visitor Centre underwent a refresh to enhance the experience for visitors.

The Visitor Centre welcomes thousands of community members through its doors each year, from visitors to the region to school groups. It offers an opportunity to learn more about the NWS Project's history in Karratha, its operations and its ongoing role in supplying energy security in Western Australia and beyond.

Acting Asset Manager NWS Onshore, Perrine Lombart, said working closely with local contractors was a key focus in creating a modern visitor experience.

"We are proud to be part of the Karratha community, and the refreshed Visitor Centre allows us to share our story - from the history of Woodside and the NWS Project, to the important role we play in supporting the communities where we live and work."

The works brought together local contractors, including Birndirri, Impact Digi and C Signs, strengthening the NWS Project's contribution to the regional economy and prioritising local capability. Their involvement drew on longstanding experience of working in the Pilbara.

Jake Throssell, Construction Supervisor at Birndirri, said the project demonstrated the value of working closely with local contractors.

"Working with the Woodside team to deliver the Visitor Centre refresh was a positive experience and we are proud to have contributed to a space that visitors can enjoy for many years to come."

Jason Miltrup, Operations Manager at Impact Digi, said working with Woodside to redesign the Visitor Centre signage has been a great project for the team.

"We're proud to have played a role in transforming the space into a modern and engaging environment for visitors."

Cameron Inch, Director of C Signs, said the project was a valuable opportunity for local businesses.



Visitors are warmly welcome to experience the refreshed centre.

"Being part of the Visitor Centre refresh allowed us to bring the NWS Project's history and operations into focus and showcase the capabilities of our small business."

The Visitor Centre will be open from Tuesday, 7 April 2026, more details below:

Street Address:
Burrup Road, Burrup Peninsular, Dampier WA, 6713
Opening Times:
April - October
School term: 10am - 2pm, Tuesday and Wednesday
School holidays: 10am - 2pm, Tuesday - Friday

Follow the Woodside North West Facebook page for updates to opening hours here.

Woodside welcomes new apprentices and trainees


New starters at Woodside Training Academy.

Woodside are delighted to welcome the 2026 trainee and apprentice cohort across our North West operations.

This year, 23 Karratha-based recruits will be hosted at the Woodside Training Academy, 13 are local school leavers. Employed by Programmed Skilled Workforce, roles include service operator trainees, apprentices, pathway trainees and school-based trainees.

The new recruits now form part of a broader group of 63 apprentices and trainees developing their skills across Woodside's Karratha Gas Plant, Pluto LNG Park and Karratha Supply Facilities.

Reflecting our commitment to diversity, 47% of recruits this year are women and 52% are Indigenous, strengthening our future workforce and continuing our long-standing investment in local capability.

We can't wait to see where this journey takes our newest team-mates.

Stay up to date on our continued contribution to the local community Woodside North West

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Pluto LNG and flare maintenance underway

In 2026, Woodside is undertaking a series of important works at Pluto LNG as we prepare to integrate the exiting facility with the Scarborough Energy Project. This includes improvement works to our flare system and a major planned maintenance campaign, known as a turnaround, commencing in May 2026.

Together with the upcoming commissioning and start-up of the new Pluto Train 2 facilities later this year, these staged works support the safe and reliable operations of Pluto LNG.

The turnaround includes a planned shutdown of parts of the facility so essential inspections, repairs, and upgrades can be carried out safely. This work can't be done while the plant is operating. To make the systems safe to execute the maintenance and project scopes, hydrocarbons need to be removed. This is the primary source of flaring during a turnaround.

Alongside preparation for the turnaround, Woodside is carrying out improvement activities on Pluto LNG's flare systems as part of our regular maintenance program. These works will help ensure the facility continues to operate safely and reliably, improve how gas is burned in the flare and reduce smoke where possible. It also ensures the flare system is ready to support future operations.

Flare improvement works are being completed in stages and are expected to continue in the first half of 2026. A testing stage is required to confirm systems are operating as intended before returning to normal operations.



Increased flaring is expected at Pluto LNG during these activities, particularly during system testing and restart works. This may include larger flames, increased noise, and occasional visible smoke, which is managed and reported in line with regulatory requirements.

Woodside adheres to regulatory requirements governing emissions, including those from flaring activities, and we implement robust monitoring to minimise environmental impacts.

To learn more about flaring, we invite you to view a short animation by scanning the QR code. You can also contact the Woodside Community Information Line on 1800 634 988.

Learn more about Woodside controlled flaring here.

Locals land a solid catch with new artificial reef

Recreational fishers in Dampier and Karratha have something to get excited about, with Recfishwest and Woodside Energy successfully installing a new artificial reef near Rosemary Island. The project has been years in the making with aims to boost local marine life and create a high-quality fishing destination for Pilbara residents and visitors.

The reef is made up of 48 purpose-built concrete modules, transported and lowered into place in December 2025. Within days, the first marine species began moving in. Acting EVP and COO Australia, Breyden Lonnie said the project reflects Woodside's commitment to supporting the region.

"Woodside is excited to collaborate with Recfishwest and the local fishing community to bring this new reef to life," he said. "The reef is expected to provide a productive marine habitat for diverse species of algae and corals, supporting an abundance of fish life."

Situated in approximately 35 metres of water and roughly 30 kilometres from the Dampier boat ramp, the reef's modules have been engineered with complex internal spaces that encourage coral growth, protect juvenile fish and support larger species such as spanish mackerel, cobia, emperor, cod and even sailfish. For local fishers it is expected to become a new fishing hotspot.

It's not all about fishing action. The reef is also expected to support local tourism and economic activity. Similar artificial reefs like Exmouth's King Reef, have shown how previously barren seafloor can transform into thriving ecosystems supporting more than 150 species within a few years.

The Dampier Artificial Reef is a true community effort, delivered with support from the WA Government, the City of Karratha, Traditional Owners and local fishing clubs.



Dampier Artificial Reef coordinates.



48 concrete modules were carefully lowered into place.

Recfishwest will provide updates as the reef continues to establish. For now, Pilbara anglers can look forward to a fresh fishing hotspot right on Dampier's doorstep.

The installation of the reef was funded by Woodside and its Scarborough Joint Venture partners; JERA Australia and LNG Japan. Woodside also acknowledges its Enfield Joint Venture partner Mitsui E&P Australia, for contributing to the acquisition of the concrete modules for the reef.

Stay up to date on our continued contribution to the local community Woodside North West

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Murujuga Ranger vessel Nyamina sets sail

Representatives from Murujuga Aboriginal Corporation (MAC) Rangers and Circle of Elders, State Government and Woodside Energy joined together recently to celebrate the launch of the new Murujuga Ranger vessel, the Nyamina.

Named after the dugongs that inhabit Murujuga Sea Country, the Nyamina is a custom-built 5.8 metres rigid-hulled inflatable boat, designed for inshore waters and safe landing and unloading on beaches.

The vessel was funded by the State Government via Lotterywest and Woodside Energy, which contributed support towards the vessel, additional camera equipment and two years of operating costs.

Guided by the Murujuga Circle of Elders, the vessel will support ongoing collaboration between Rangers, government agencies and researchers in the management of Sea Country. It also provides the opportunity for Rangers to gain diverse skills and qualifications, including coxswain certification.

MAC Chairperson Peter Hicks said "The launch of this vessel is a proud moment for Murujuga, our Rangers, and for the ongoing care of our World Heritage listed Murujuga Cultural Landscape, which extends across the Burrup Peninsula, the islands of the Dampier Archipelago, and Sea Country."

Matthew Turnbull, General Manager Scarborough Business shares Woodside's pride in co-funding the vessel, supporting Ranger-led management of Murujuga and long-term outcomes for cultural heritage and Country. He says "MAC Rangers play a critical role in protecting cultural heritage, monitoring Country and supporting research across the World Heritage Listed Murujuga Cultural landscape."

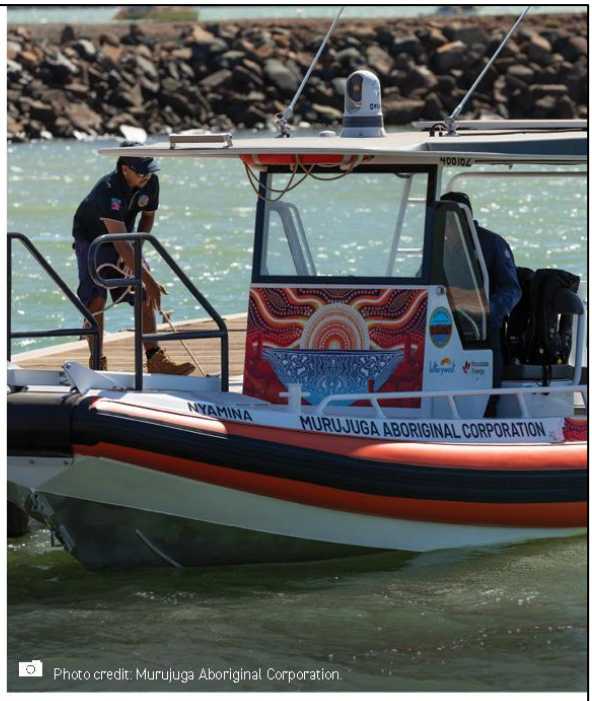


Photo credit: Murujuga Aboriginal Corporation.

"The launch of Nyamina gives the Rangers greater capability to manage Sea Country and to continue this important work safely and independently."

Watch the official launch on MAC's YouTube here.

KGP sets new record for lowest flaring

In 2025, Woodside achieved record low flaring performance at Karratha Gas Plant with flared quantities less than 10% of their peak in 2013.

This success reflects years of continuous improvement, which Matt Ladner, Senior Emissions and Production Optimisation Engineer, credits to a strong culture focused on emissions reduction, safety and reliability.

"It's a testament to the dedication of our engineering and operations teams who have embedded low-flaring practices into daily routines and decision making," says Matt.

"The record has been a result of a reliable plant and playing the long game in identifying and implementing flare reduction opportunities," explains Matt.

Flaring targets are set each year based on planned maintenance activities and expected plant reliability.

In 2025, Woodside implemented solutions to reduce our daily flaring by removing permanent gas supply to the flare, as well as optimised LNG plant maintenance and equipment restart improvements.

Woodside Community Grants

Applications now open

The Woodside Community Grants program is part of our commitment to help build local capacity and develop opportunities for community wellbeing.

If your club or organisation has a great idea or needs extra support, Woodside wants to hear from you. Grants of up to $5000 are available to support community initiatives in the City of Karratha, Shire of Exmouth and Town of Onslow.



Applications close Tuesday, 31 March 2026.

Find out more about Woodside Community Grants here.
For more information, please email northwestcommunities@woodside.com

woodside.com

Woodside Energy

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6.6.2.2 Edition Q2 – June 2026

Karratha Community Update

June 2026

Proposed Browse to North West Shelf Project continues to progress

The proposed Browse to North West Shelf (NWS) Project (Browse) presents a significant opportunity for Karratha, Western Australia and our regional partners.

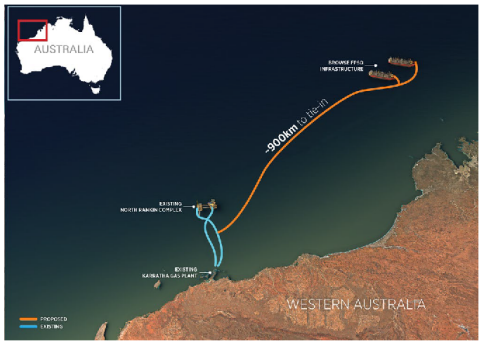
As Australia's biggest undeveloped offshore gas resource, Browse offers long-term energy security to power homes and businesses and could create thousands of jobs and considerable economic benefits and tax revenue.

Importantly, processing Browse natural gas through the existing NWS infrastructure will keep the Karratha Gas Plant (KGP) operating, supporting local jobs in the region and helping Woodside continue its long-standing support for the Karratha and Roebourne communities.

The Browse project will develop gas fields in the Browse Basin, approximately 425 kilometres north of Broome, with gas transported via subsea pipelines to existing NWS infrastructure near Karratha.

A key focus of the project is carbon management. The development concept includes carbon capture and storage (CCS) infrastructure, designed to capture and permanently store a significant portion of carbon dioxide produced from the gas fields. This could reduce the project's emissions and lower the carbon intensity of gas supplied through the NWS.

Minimising environmental impacts is also central to project planning. The project is undergoing environmental assessment processes with both the Western Australian Environmental Protection Authority and the Commonwealth Department of Climate Change, Energy, the Environment and Water. As this assessment has progressed, Woodside has continued to provide updated scientific data and committed to additional measures aimed at minimising environmental impacts to marine life, including pygmy blue whales and green turtles. These changes include design, operational and monitoring controls, including spatial setbacks from sensitive receptors, vessel speed and noise management measures, and enhanced monitoring programs focused on key habitats such as Sandy Islet.



This image is conceptual only, not to scale. Developments are subject to joint venture approvals, regulatory approval and relevant commercial arrangements.

These measures build on more than 30 years of research carried out by Woodside and its joint venture partners at Scott Reef and in surrounding waters.

Browse is currently in the concept definition phase. As planning continues, Woodside has committed to ongoing engagement with regulators, Traditional Owners, local communities in the Pilbara and key stakeholders as the project is progressed.

For more information, view the Browse fact sheet here

Browse to deliver long-lasting benefits

MORE JOBS
4,760

Direct and indirect full-time equivalent jobs estimated across Australia at peak operations.[2]

Equivalent to staffing around 80 Western Australian public schools for a year.[3]

MORE TAX
A$56.2 BILLION

In estimated taxes, royalties and excise, including ~A$19.8 billion in Petroleum Resource Rent Tax (PRRT).

Equivalent to funding one new hospitalevery year for 31 years.[4]

STRONGER ECONOMY
~A$141 BILLION

Estimated uplift in Gross Domestic Product (GDP).[5]

On average, economic activity in Australia is expected to increase by around A$2.9 billion each year over the life of the Project, equivalent to more than 5 per cent of Australia's average annual GDP growth.[6]

Headline economic Figures are based on Deloitte Access Economics' independent modelling.[1]

1. Deloitte Access Economics, Browse to NWS Economic Impact Assessment, May 2026. Report commissioned by Woodside as Operator on behalf of the Browse Joint Venture. 2. Reflects broader supply chain and service industry roles generated across all regions. 3. Department of Education's 2024-25 Annual Report. 4. Women and Babies Hospitals - WA Government (2025) Budget Paper No. 2 Volume 1. 5. 2025 real undiscounted terms. Uplift over the life of the Project. A$34.2 billion in present value terms. Discounted at seven per cent per annum. 6. Australian Bureau of Statistics, Australian National Accounts 2024-25.

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Woodside Energy recognises Aboriginal and Torres Strait Islander peoples as Australia's first people.

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 Indigenous Peoples and communities around the world.

Sharing stories from Ngarluma and Yindjibarndi Country



Sharon Warrie, Art Development Camp. Perth 2025. Photo by Marnie Richardson courtesy of FORM

The Woodside-operated Pluto LNG Project's community partnership with FORM is supporting Roebourne (Ieramugadu) artists to share important cultural stories from Ngarluma and Yindjibarndi Country.

As part of the community partnership, last year FORM worked with local artists to present the Where We Come From: The Artists of Ngarluma and Yindjibarndi Country exhibition at FORM Gallery in Perth. The exhibition showcased art that highlights rich cultural histories, lived experiences and strong connections to Country.

The project was shaped to tell these stories in an authentic and meaningful way. The result was a community-led exhibition that celebrated culture while also giving artists hands-on experience in curation, exhibition design and public engagement, helping build skills for future opportunities in arts.

More than 3,300 people visited the exhibition, taking part in guided tours, storytelling sessions, panel discussions and children's workshops, gaining a deeper understanding of local culture and identity.

Woodside is proud to support initiatives like this as part of our broader investment in Roebourne, helping strengthen local capability, culture and community wellbeing.

Woodside's 2026 Academy Awards

Woodside is proud to welcome 25 apprentices and trainees who have graduated from the Woodside Training Academy, marking an important milestone as they transition into roles across our business.

The Woodside Training Academy Graduation and Awards, held at the Red Earth Arts Precinct in Karratha, celebrated the cohort's achievements and recognised the dedication, resilience and perseverance shown throughout their training journey.

Academy Team Lead, Jacqui Meeson said the event was an opportunity to acknowledge both the collective success of the cohort and the outstanding contribution of the individuals.

"The award recipients were recognised not only for their technical capability, but for their commitment to learning, teamwork and living Woodside's values," Jacqui said.

"We are incredibly proud of what this group has achieved and look forward to their continued contribution to our workforce."

The ceremony also acknowledged the important role of mentors, supervisors and trainers who supported the graduates along the way. Pluto Asset Manager, Kate Bardill, thanked those across the business who contributed to developing future talent.

"Our graduates have built strong technical foundations and demonstrated the behaviours that will set them up for success," she said.

Woodside continues to invest in building local capability through its long-standing partnership with Programmed Training Services. Around 80 apprentices and trainees are currently hosted across the Australian business, developing skills and experience that will support the future of our operations in Western Australia.



Woodside's 2026 Training Academy graduates on stage in Karratha, celebrating the successful completion of their apprenticeships and traineeships.

Stay up to date on our continued contribution to the local community **Woodside North West**

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Roebourne school upgrade opens doors for students

Students and families in Ieramugadu (Roebourne) are now enjoying new and upgraded facilities at Roebourne District High School, following completion of the latest stage of the school's redevelopment.

The new facilities include additional classrooms for advisory programs, dedicated pastoral care spaces and preparation areas for teachers, Aboriginal and Islander Education Officers, and student support services, helping create a more supportive and engaging learning environment.

The redevelopment is part of a multi-stage project focused on improving education outcomes in Roebourne, while embedding Indigenous history, culture and language into the design and daily life of the school.

Woodside contributed A$20 million towards the project through the Resources Community Investment Initiative, as part of our broader, long-term investment in the Roebourne community.

In 2025, Woodside and its Joint Venture participants also invested more than A$5.7 million in programs supporting education and community wellbeing in Roebourne.

Woodside Chief Executive Officer, Liz Westcott said the opening marked an important milestone.

"For Woodside, supporting communities means working in partnership and investing for the long term," Liz said.

"Education has always been central to that commitment in Roebourne, and these new facilities reflect what can be achieved when community, government and industry work together."



Students from Ieramugadu (Roebourne) at the opening of the new and upgraded facilities alongside WA Premier Roger Cook and Woodside CEO Liz Westcott.

For more than a decade, Woodside has worked alongside the school and educators through the Karratha and Roebourne Education Initiative, supporting literacy and numeracy development, strengthening student engagement and pathways beyond school.

Celebrating creativity and connection at REAF

Woodside and our joint venture partners were pleased to support the City of Karratha's Red Earth Arts Festival (REAF) for another year, with a vibrant 2026 program bringing the community together through arts, culture and creativity.

At The Quarter, our continued support helped deliver a range of free, family-friendly activities, transforming the space into a lively hub of artistic and cultural activity. A highlight was the Harmony & HeART community event, featuring live entertainment, roving performers, markets and activities for all ages.

The 'Silent Observers' installation brought tree disc artworks to life through projection mapping, creating an engaging and immersive visual experience.

Artists from Yinjaa-Barni Art Group painted and displayed artworks on site, welcoming the community to watch the creation of several pieces and engage in conversations. They also hosted a kids' workshop, where young creatives could learn about culture and storytelling through art, creating their own pieces to take home.

The evening program featured roving entertainment, stage performances, music, food trucks and the Karratha & Districts Chamber of Commerce and Industry markets. Woodside employees at the Woodside stall enjoyed the opportunity to engage with the community, share updates on our activities in the north west and hear local feedback in a relaxed and welcoming environment.

Thanks to the City of Karratha for featuring the four-day festival delivered a diverse mix of performances, workshops and experiences across Karratha and surrounding communities, including Roebourne, Dampier, Cossack and Point Samson.

Audiences enjoyed a strong line-up of local, national and Indigenous artists, including the West Australian Opera Gala and theatre performances such as Blacksheep and Shadow Boxing, alongside live music, comedy and cultural storytelling.

REAF continues to grow as a much-loved event in the region, and Woodside and its joint venture partners are proud to support community events that contribute to the vibrancy and liveability of the Pilbara.



Highlights from the Red Earth Arts Festival (REAF) in Karratha, where Woodside employees enjoyed engaging with the community. Photos courtesy of Pilbara Site Photos and Woodside.

Stay up to date on our continued contribution to the local community Woodside North West

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APPENDIX G OIL SPILL PREPAREDNESS AND RESPONSE MITIGATION ASSESSMENT

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Woodside Energy

Oil Spill Preparedness and Response Mitigation Assessment for Browse to NWS Project Geophysical and Geotechnical Surveys Environment Plan (Commonwealth)

Corporate HSE

Hydrocarbon Spill Preparedness

September 2026

Revision 0

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EXECUTIVE SUMMARY

Woodside Energy Ltd (Woodside), as Operator of the Browse development, has developed its oil spill preparedness and response position for the Browse Geophysical and Geotechnical (GPGT) Surveys - Commonwealth activities (the 'Petroleum Activity').

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 an acceptable level. It achieves this by evaluating response options to address the potential environmental impacts resulting from an unplanned loss of hydrocarbon containment associated with the Petroleum Activity described in the Environment Plan (EP). This document 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	Credible Scenario-01 (CS-01): Vessel collision at Operational Area A. 14°1'24.07"S, 121°54'40.46"E. Instantaneous surface release of 200 m^3 of Marine Gas Oil (MGO). 5% residual component of 10 m^3.			Section 2.2
	Credible Scenario-02 (CS-02): Vessel collision at Operational Area B. 14°23′45.39"S, 121°41'48.81"E. Instantaneous surface release of 200 m^3 of Marine Gas Oil (MGO). 5% residual component of 10 m^3.			
Hydrocarbon Properties	MGO is a mixture of volatile and persistent hydrocarbons with low proportions of highly volatile and residual components. Evaporation rates will increase with temperature, but in general about 40% should evaporate within the first 24 hours (BP < 265 °C). Evaporation then slows, with ~5% of the remaining mass lost over the following six days. Only a small fraction (~2%) is degraded by microbial and photochemical processes during the first week. The low viscosity of MGO fuels require relatively low wave energy to break up floating slicks and suspend MGO as droplets mixed into the wave-affected layer of the ocean surface. These suspended droplets will be buoyant but will remain in suspension when there is sufficient wave energy. Waves generated by wind speeds as low as 6–7 knots on the open ocean will start to suspend films of floating MGO. Entrainment rates will increase significantly as sea conditions become more energetic. One effect of suspension will be reduction of the evaporation rates of the component hydrocarbons.			Section 6.9.1 of the EP Appendix A of the First Strike Plan
Modelling Results	Stochastic modelling A quantitative, stochastic assessment has been undertaken for credible spill scenarios to help assess the environmental risk of a hydrocarbon spill. A total of 200 replicate simulations were completed for the scenarios to test for trends and variations in the trajectory and weathering of the spilled oil, with an even number of replicates completed using samples of metocean data that commenced within each calendar quarter (50 simulations per quarter).			Section 2.3
		CS-01: Instantaneous hydrocarbon release of 200 m^3 MGO caused by vessel collision in Operational Area A (WCCS)	CS-02: Instantaneous hydrocarbon release of 200 m^3 MGO caused by vessel collision in Operational Area B	

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	Minimum time to floating hydrocarbon contact with the offshore edge(s) of any shoreline receptor polygon (at a concentration of 10 g/m^2)	1 hour – Scott Reef North and Scott Reef South	15 hours – Scott Reef South	
	Minimum time to commencement of hydrocarbon accumulation at any shoreline receptor (at a concentration of 100 g/m^2)	10 hours – Scott Reef South (including Sandy Islet)	54 hours – Scott Reef South (including Sandy Islet)	
	Maximum accumulated hydrocarbon volume at any individual shoreline receptor (averaged over all replicate simulations)	2 m^3 – Scott Reef South (including Sandy Islet)	<1 m^3 – Scott Reef South (including Sandy Islet)	
	Maximum accumulated hydrocarbon volume at any individual shoreline receptor (worst case replicate simulation)	80 m^3 – Scott Reef South (including Sandy Islet)	11 m^3 – Ashmore Reef	
	Maximum cumulative hydrocarbon volume accumulated across all shoreline receptors contacted by accumulated hydrocarbons	80 m^3 – Scott Reef South (including Sandy Islet) (only one receptor predicted to be contacted)	11 m^3 – Ashmore Reef	
	Minimum time to dissolved hydrocarbon contact with the offshore edges of any receptor polygon (at a exposure value of 10 ppb)	1 hour – Scott Reef North	10 hours – Scott Reef South	
Net Environmental Benefit Analysis	Monitor and evaluate, source control, shoreline clean-up, oiled wildlife response, are all identified as potentially having a net environmental benefit (dependent on the actual spill scenario) and carried forward for further assessment.			Section 4
ALARP evaluation of selected response techniques	The evaluation of the selected response techniques shows the proposed controls reduced the risk to an ALARP and acceptable level for the risk presented in Section 2, without the implementation of considered additional, alternative or improved control measures.			Section 6

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1 INTRODUCTION

1.1 Overview

Woodside Energy Ltd (Woodside), as Operator of the Browse development, has developed its oil spill preparedness and response position for the Browse Geophysical and Geotechnical Surveys – Commonwealth activities, hereafter known as the Petroleum Activity. 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.

- The Browse to NWS Project Geophysical and Geotechnical Surveys Environment Plan (Commonwealth) Environment Plan (EP)
- Hydrocarbon Spill Australia Regulatory Framework[1]
- The Browse to NWS Project Geophysical and Geotechnical Surveys (Commonwealth) 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.

1.3 Scope

This document demonstrates that the risks and impacts from an unplanned hydrocarbon release, and the associated response operations, are controlled to ALARP and an acceptable level. 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 Petroleum Activity described in the EP. This document then outlines Woodside's decisions and techniques for responding to a hydrocarbon release event and the process for determining its level of hydrocarbon spill preparedness. It should be read in conjunction with the documents listed in Table 1-1. The location of the Petroleum Activity is shown in Figure 3-1 of the EP.

1.4 Oil spill response document overview

The documents outlined in Table 1-1 and Figure 1-1 are collectively used to manage the preparedness and response for a hydrocarbon release.

The Oil Pollution First Strike Plan (FSP) contains a pre-operational Net Environmental Benefit Analysis (NEBA) summary, outlining the selected response techniques for this Petroleum Activity. 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 monitor and evaluate and operational monitoring activities and the operational NEBA (Section 4). Planning, coordination and resource management are initiated by the Corporate Incident

1 In accordance with Regulation 56 of the Environmental Regulations, references to the Hydrocarbon Spill Australia Regulatory Framework within this document refer to the version submitted with accepted North West Shelf Phase 1 Plug and Abandonment and TPA03 Well Intervention Environment Plan, which is available on NOPSEMA's website at: https://docs.nopsema.gov.au/A1282743

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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 to confirm 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.

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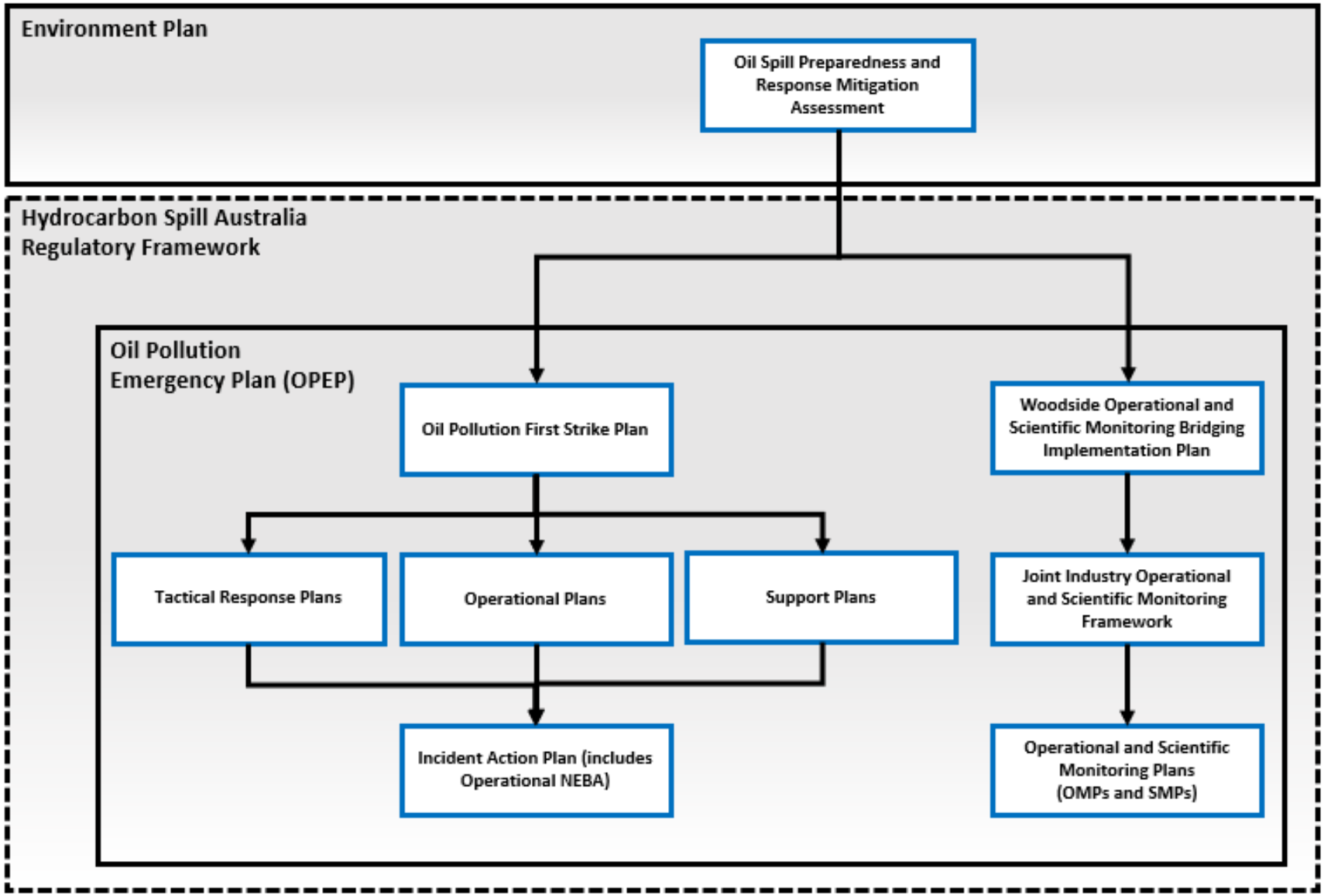


Figure 1-1: Woodside hydrocarbon spill document structure

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Table 1-1: Hydrocarbon Spill preparedness and response – document references

Document	Document overview	Stakeholders	Relevant information	Document subsections (if applicable)
Browse Geophysical and Geotechnical Surveys – Commonwealth – Environment Plan (EP)	Demonstrates that potential adverse impacts on the environment associated with the Petroleum Activity (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.	National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) Woodside internal	EP Section 6 (Identification and evaluation of environmental risks and impacts, including credible spill scenarios) EP Section 6 (Performance outcomes, standards and measurement criteria) EP Section 7 (Implementation strategy – including emergency preparedness and response, and Reporting and compliance)	
Hydrocarbon Spill Australia Regulatory Framework[1]	Describes the arrangements and processes adopted by Woodside when responding to a hydrocarbon spill from a petroleum activity.	Regulatory agencies Woodside internal	All	
Oil Spill Preparedness and Response Mitigation Assessment for the Browse Geophysical and Geotechnical Surveys – Commonwealth (this document)	Evaluates response options to address the potential environmental impacts resulting from an unplanned loss of hydrocarbon containment associated with the Petroleum Activity described in the EP.	Regulatory agencies Corporate Incident Management Team (CIMT): Control function in an ongoing spill response for activity-specific response information.	All Performance outcomes, standards and measurement criteria related to hydrocarbon spill preparedness and response are included in this document.	
Browse Geophysical and Geotechnical Surveys – Commonwealth Oil Pollution First Strike Plan	Facility specific document providing details and tasks required to mobilise a first strike response. Primarily applied to the first 24 hours of a response until a full Incident Action Plan (IAP) specific to the event is developed. Oil Pollution First Strike Plans are intended to be the first document used to provide	Site-based IMT for initial response, activation and notification. CIMT for initial response, activation and notification. CIMT: 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	

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Document	Document overview	Stakeholders	Relevant information	Document subsections (if applicable)
	immediate guidance to the responding Incident Management Team (IMT).		trajectory modelling, aerial surveillance and oil spill tracking buoy details.	
Operational Plans	Lists the actions required to activate, mobilise and deploy personnel and resources to commence response operations. 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. 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.	CIMT: Operations and Logistics Sections for first strike activities. CIMT: Planning Section to help inform the IAP on resources available.	Locations from where resources may be mobilised. How resources will be mobilised. Details of where resources may be mobilised to and what facilities are required once the resources arrive. Details on how to implement resources to undertake a response.	Operational Monitoring Operational Plan Shoreline clean-up Oiled wildlife response
Operational and Scientific Monitoring (OSM) Bridging Implementation Plan	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 is aligned to the Joint Industry Operational and Scientific Monitoring Framework (Australian Petroleum Production & Exploration Association [APPEA] 2021) and describes how this Framework applies to Woodside's activities and spill risks in Australian waters.	Site-based IMT for initial activation and notification. OSM Service Providers Regulatory agencies	Mobilisation and notification process for OSM, including activation of OSM Service Providers Information on initial scientific monitoring priorities OSM arrangements and capability Permitting and access requirements for OSM	

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Document	Document overview	Stakeholders	Relevant information	Document subsections (if applicable)
Tactical Response Plans	Provides options for response techniques in selected response protection areas (RPAs). Provides site, access and deployment information to support a response at the location.	CIMT: Planning Section to help develop IAPs, and Logistics Section to assist with determining resources required.	Indicative response techniques. Access requirements and/or permissions. Relevant information for undertaking a response at that site. Where applicable, may include equipment deployment locations and site layouts.	For full list of relevant Tactical Plans for the Petroleum Activity, refer to ANNEX D: Tactical Response Plans.
Support Plans	Support Plans detail Woodside's approach to resourcing and the provision of services during a hydrocarbon spill response.	CIMT: Operations, Logistics and Planning Sections.	Technique for mobilising and managing additional resources outside of Woodside's immediate preparedness arrangements.	Logistics Support Plan Aviation Support Plan Marine Support Plan Waste Management Plan – Australia Health and Safety Support Plan Hydrocarbon Spill Responder Health Monitoring Guidelines People and Global Capability (Surge Labour Requirements) Support Plan Stakeholder Engagement Support Plan Guidance for Hydrocarbon Spill Claims Management

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2 RESPONSE PLANNING PROCESS

This document details Woodside's process for identifying potential response options for the hydrocarbon release scenarios, identified in the EP. Figure 2-1 outlines the interaction between Woodside's response, planning, preparedness and selection process.

This structure has been used because it shows how the planning and preparedness activities inform a response and provides indicative guidance on what activities would be undertaken, in sequential order, if a real event were to occur. The process also evaluates alternative, additional and/or improved control measures specific to the Petroleum Activity.

The Browse to NWS Project Geophysical and Geotechnical Surveys (Commonwealth) Oil Pollution First Strike Plan (FSP) 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.

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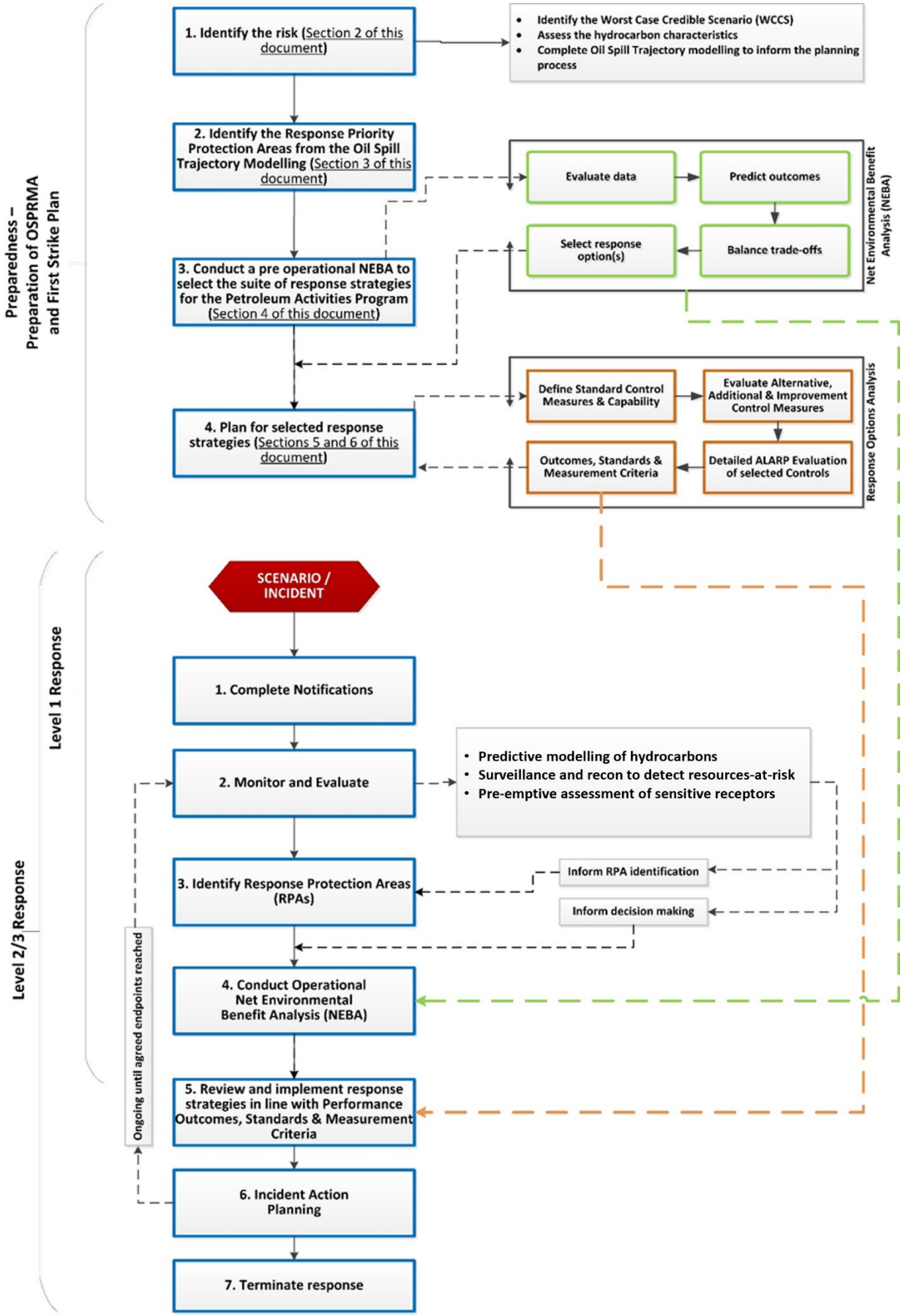


Figure 2-1: Response planning and selection process

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2.1 Response planning process outline

This document is expanded below to provide additional context on the key steps in determining capability, evaluating ALARP and hydrocarbon spill response requirements.

- Section 1: Introduction
- Section 2: Response planning process
  - identification of worst-case credible scenario(s) (WCCS)
  - spill modelling for WCCS.
- Section 3: Identify response protection areas (RPAs)
  - areas predicted to be contacted at concentration >100 g/m^2.
- Section 4: Net environmental benefit analysis (NEBA)
  - pre-operational NEBA (during planning/ALARP evaluation): this must be reviewed during the initial response to an incident to confirm its accuracy
  - selected response techniques prioritised and carried forward for ALARP assessment.
- Section 5: Hydrocarbon spill ALARP process
  - determines the response need based on predicted consequence parameters.
  - details the environmental performance of the selected response options based on need.
  - sets the environmental performance outcomes, environmental performance standards and measurement criteria.
- Section 6: ALARP evaluation
  - evaluates alternative, additional, and improved options for each response technique to demonstrate the risk has been reduced to ALARP.
  - provides a detailed ALARP assessment of selected control measure options against:
    - predicted cost associated with implementing the option
    - predicted change to environmental benefit
    - predicted effectiveness / feasibility of the control measure.
- Section 7: Environmental risk assessment of selected response techniques
  - evaluation of impacts and risks from implementing selected response options.
- Section 8: ALARP conclusion
- Section 9: Acceptability conclusion

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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.

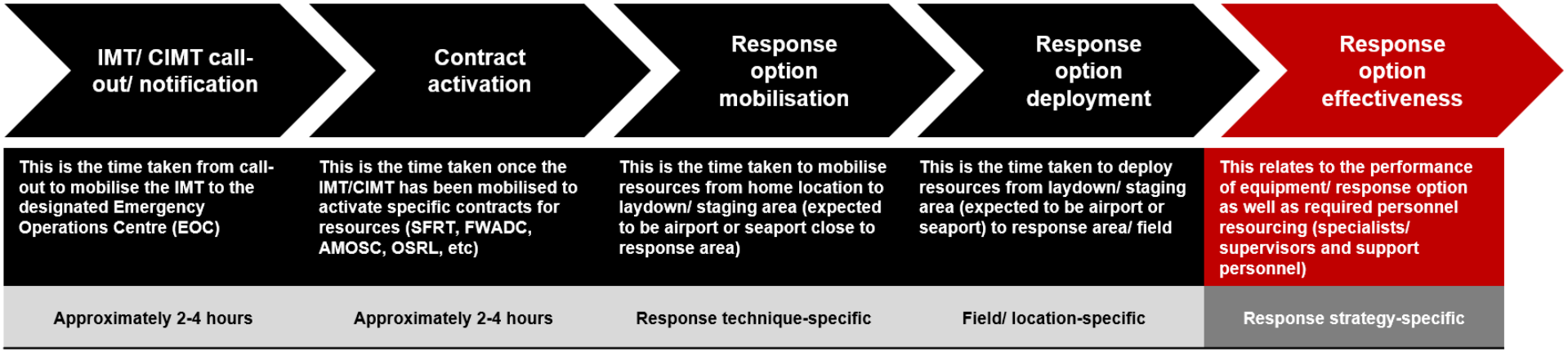


Figure 2-2: Response planning assumption – timing, resourcing and effectiveness

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2.2 Environment plan risk assessment (credible spill scenarios)

Potential hydrocarbon release scenarios from the Petroleum Activity have been identified during the risk assessment process (Section 6.9 of the EP). Further descriptions of risk, impacts and mitigation measures (which are not related to hydrocarbon preparedness and response) are provided in Section 6 of the EP. Two unplanned events or credible spill scenarios for the Petroleum Activity have been selected as representative across types, sources and incident/response levels, up to and including the WCCS.

Table 2-1 presents the credible scenarios for the Petroleum Activity. The WCCS for the activity is then used for response planning purposes, as all other scenarios are of a lesser scale and extent. By demonstrating capability to manage the response to the WCCS, Woodside assumes other scenarios that are smaller in nature and scale can also be managed by the same capability. Response performance measures have been defined based on a response to the WCCS.

Two oil spill modelling scenarios were run at different locations within the operational area (RPS 2026). The location of CS-01 was selected as the worst-case location for the Petroleum Activity due to its proximity to Scott Reef. The location of CS-01 and CS-02 are shown in Figure 2-3.

The selection of WCCS for OSM planning purposes is discussed in ANNEX C: Petroleum Activity OSM Activity Specific Requirement and Verification of OSM-BIP Adequacy.

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Table 2-1: Petroleum Activities Program credible spill scenarios

Credible Spill Scenarios	Scenario selected for planning purposes	Scenario description	Maximum credible volume released (liquid m^3)1	Incident level	Hydrocarbon type	Residual proportion	Residual volume (m^3)
Credible Spill Scenario-01 (CS-01) (WCCS)	Yes	Hydrocarbon release caused by vessel collision at location A	200	2	MGO	5%	10
Credible Spill Scenario-02 (CS-02)	No	Hydrocarbon release caused by vessel collision at location B	200	2	MGO	5%	10

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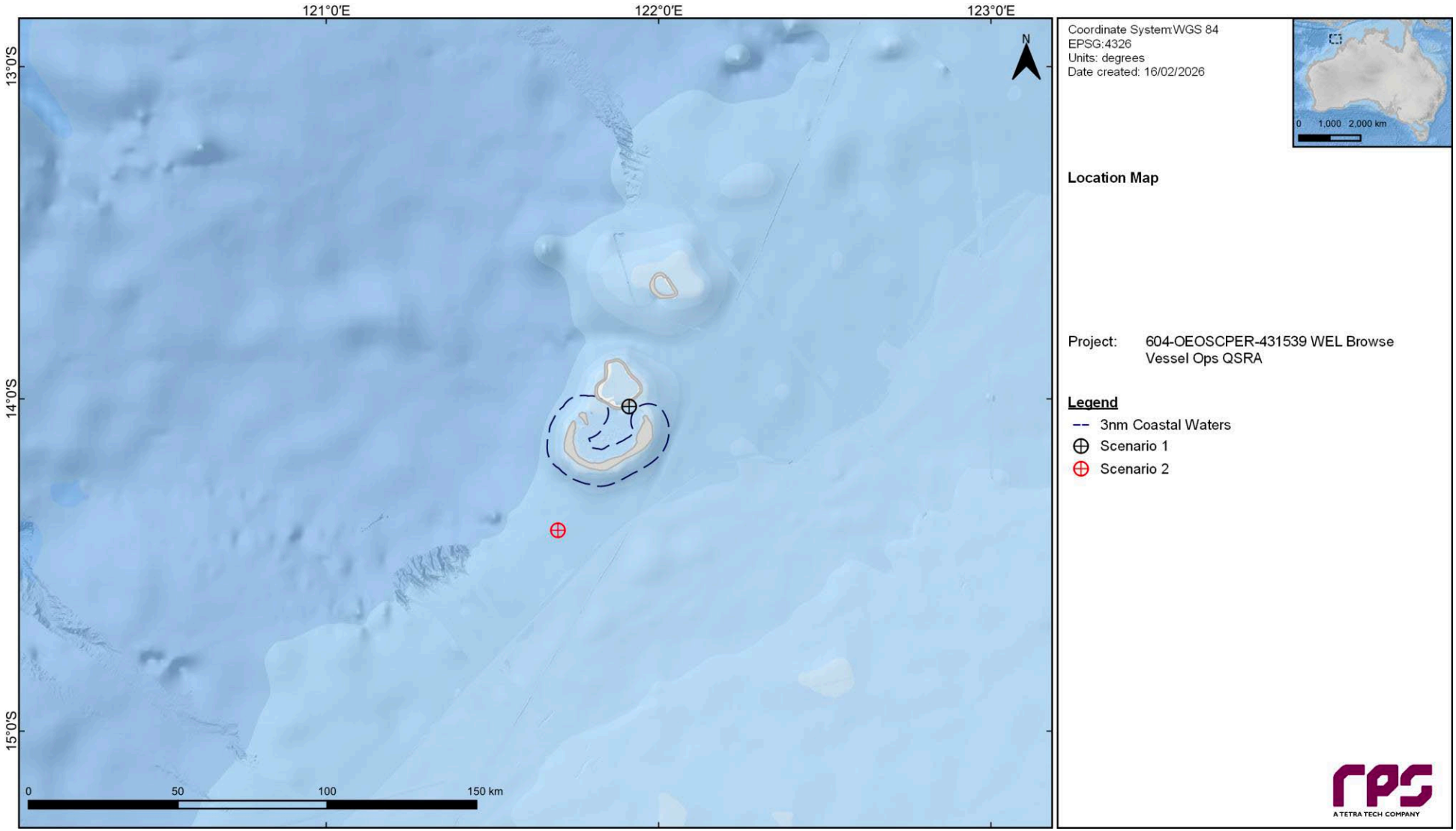


Figure 2-3: Location of CS-01 (Scenario 1) and CS-02 (Scenario 2)

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2.2.1 Hydrocarbon characteristics

Hydrocarbon characteristics, including modelled weathering data and ecotoxicity, are included in Section 6.9.1.2 of the EP.

Marine Gas Oil

Marine Gas Oil (MGO) is typically classed as an International Tanker Owners Pollution Federation (ITOPF) Group I/II oil. Group I oils are non-persistent and tend to dissipate completely through evaporation within a few hours and do not normally form emulsions.

MGO is a mixture of volatile and persistent hydrocarbons with low proportions of highly volatile and residual components. In general, about 6% of the oil mass should evaporate within the first 12 hours (BP < 180 °C); a further 35% should evaporate within the first 24 hours (180 °C < BP < 265 °C); and a further 54% should evaporate over several days (265 °C < BP < 380 °C). Approximately 5% of the oil is shown to be persistent. The aromatic content of the oil is approximately 3%.

If released in the marine environment and in contact with the atmosphere (i.e., surface spill), approximately 41% by mass of this oil is predicted to evaporate over the first couple of days depending upon the prevailing conditions, with further evaporation slowing over time. The heavier (low volatility) components of the oil tend to entrain into the upper water column due to wind-generated waves but can subsequently resurface if wind-waves abate. Therefore, the heavier components of this oil can remain entrained or on the sea surface for an extended period, with associated potential for dissolution of the soluble aromatic fraction.

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

Quantitative, stochastic assessments have been undertaken for the credible spill scenarios (refer to Table 2-1) to help assess the environmental consequences of a hydrocarbon spill.

A total of 200 replicate simulations were completed for each of the scenarios to test for trends and variations in the trajectory and weathering of the spilled oil, with an even number of replicates completed using samples of metocean data that commenced within each calendar quarter (50 simulations per quarter). Further details relating to the assessments for the scenarios can be found in Section 6 of the EP.

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2.3.1.1 Environmental impact thresholds – Environment that May Be Affected (EMBA) and hydrocarbon exposure

The outputs of the stochastic spill modelling are used to assess the potential environmental impact from the credible scenarios. The stochastic modelling results are used to delineate areas of the marine and shoreline environment that could be exposed to hydrocarbon levels exceeding environmental impact threshold concentrations. The summary of all the locations where hydrocarbon thresholds could be exceeded by any of the simulations modelled is defined as the EMBA and is discussed further in Section 6 of the EP. As the weathering of different fates of hydrocarbons (surface, entrained and dissolved) differs due to the influence of the metocean mechanism of transportation, a different EMBA is presented for each fate within the EP.

A conservative approach – adopting accepted accumulation thresholds for impacts on the marine environment – is used to define the EMBA. These hydrocarbon thresholds are presented in Table 2-2 below and described in Section 6 of the EP.

Table 2-2: Summary of thresholds applied to the stochastic hydrocarbon spill modelling to determine the EMBA and environmental impacts

Hydrocarbon	Surface hydrocarbon (g/m^2)	Dissolved hydrocarbon (ppb)	Entrained hydrocarbon (ppb)	Accumulated hydrocarbon (g/m^2)
EMBA				
Diesel	10	10	1,000	100
Operational and scientific monitoring (OSM) assessment (see ANNEX C: Petroleum Activity OSM Activity Specific Requirement and Verification of OSM-BIP Adequacy)				
All hydrocarbon types	1	10	10	10

2.3.2 Deterministic modelling

Response planning

Woodside uses deterministic modelling to evaluate risks and impacts and response capability requirements. For planning and scaling the clean-up element of the response, deterministic modelling is undertaken where initial stochastic modelling has indicated that hydrocarbons are present at the minimum feasible clean-up exposure values of ≥50 g/m^2 for floating hydrocarbons, and/or ≥100 g/m^2 for shoreline accumulations and where such shoreline contact is predicted at multiple locations. The deterministic modelling outputs are then used to scale the required capability for the offshore (surface dispersant and containment and recovery) and/or shoreline responses.

Stochastic modelling for CS-01 predicted shoreline contact was localised to one receptor location (Scott Reef South [including Sandy Islet]) above the 100 g/m^2 shoreline response exposure value. Similarly, modelling predicted floating hydrocarbons exceeding the exposure value of 50 g/m^2 to also be localised around Scott Reef North and South. Deterministic modelling is therefore not required and stochastic modelling has thus been used to scale the clean-up response within this assessment.

Operational and scientific monitoring

Deterministic modelling may also be used for planning Operational and Scientific Monitoring (OSM) activities. This is undertaken where stochastic modelling predicts that the existing response capability, required to resource monitoring at receptors forecast to be contacted by floating, shoreline and/or dissolved hydrocarbons (at ≥10% probability and within the initial 14 days), has been exceeded. For this Petroleum Activity, stochastic modelling does not predict that existing capability would be exceeded and therefore deterministic modelling for OSM planning is not required. Therefore, stochastic modelling has been used to plan the OSM activities as detailed in ANNEX C: Petroleum Activity OSM Activity Specific Requirement and Verification of OSM-BIP Adequacy.

Woodside is committed to a realistic, scalable response capability commensurate to the level of risk and able to be practically implemented and feasibly sustained.

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2.3.3 Response planning thresholds for surface and shoreline hydrocarbon exposure

Exposure values to determine the EMBA and inform OSM are used to predict and assess environmental impacts, however they do not appropriately represent the exposure values at which an effective response can be implemented.

Additional response exposure values are used for response planning and to determine areas where response techniques would be most effective. These exposure values are provided as a guide for response planning based on case studies that have demonstrated some response strategies (e.g. containment and recovery, chemical dispersant application) require certain oil spill thicknesses and conditions to be effective.

Response planning exposure values assist with understanding worst-case spill scenario response strategy capability requirements when used in conjunction with oil spill trajectory modelling results. Modelling informs the predicted spatial extent of the spill at certain response exposure values, which in turn can inform response strategy capability.

2.3.3.1 Surface hydrocarbon concentrations

Table 2-3: Surface hydrocarbon exposure values for response planning

Surface hydrocarbon exposure value (g/m^2)	Description	Bonn Agreement Oil Appearance Code	Mass per area (m^3/km^2)
>10	Predicted minimum exposure value for commencing monitor and evaluate[2]	Code 3 – Dull metallic colours	5–50
50	Predicted minimum floating oil exposure value for containment and recovery and surface dispersant application [3]	Code 4 – Discontinuous true oil colour	50–200
100	Predicted optimum floating oil exposure value for containment and recovery and surface dispersant application	Code 5 – Continuous true oil colour	>200
Shoreline hydrocarbon exposure value (g/m^2)	**Description**	**National Plan Guidance on Oil Contaminated Foreshores**	**Mass per area (m^3/km^2)**
100	Predicted minimum shoreline accumulation exposure value for shoreline assessment operations	Stain	>100
250	Predicted minimum exposure value for commencing shoreline clean-up operations	Level 3 – Thin Coating	200–1,000

The surface thickness of oil at which dispersants are typically effective is approximately 100 g/m^2. 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^2 ITOPF 2011). Additionally, the recommended rate of application for surface dispersant is typically one 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).

[2] Monitor and evaluate will be undertaken from the outset of a spill whether or not this exposure value 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 and Major Infrastructure (WA DTMI) or AMSA.

[3] At 50 g/m^2, containment and recovery and surface dispersant application operations are not expected to be particularly effective. This exposure value represents a conservative approach to planning response capability and containing the spread of surface oil.

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Guidance from the Australian Maritime Safety Authority (AMSA, 2020) 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.

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 the National Oceanic and Atmospheric Administration (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, 2014a, 2014b).

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 exposure values for effective response.

From this information and other relevant sources (Allen and Dale 1996, EMSA 2012, Spence 2018) the surface exposure value of 50 g/m^2 was chosen as an average/equilibrium thickness for offshore response operations (50 g/m^2 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).

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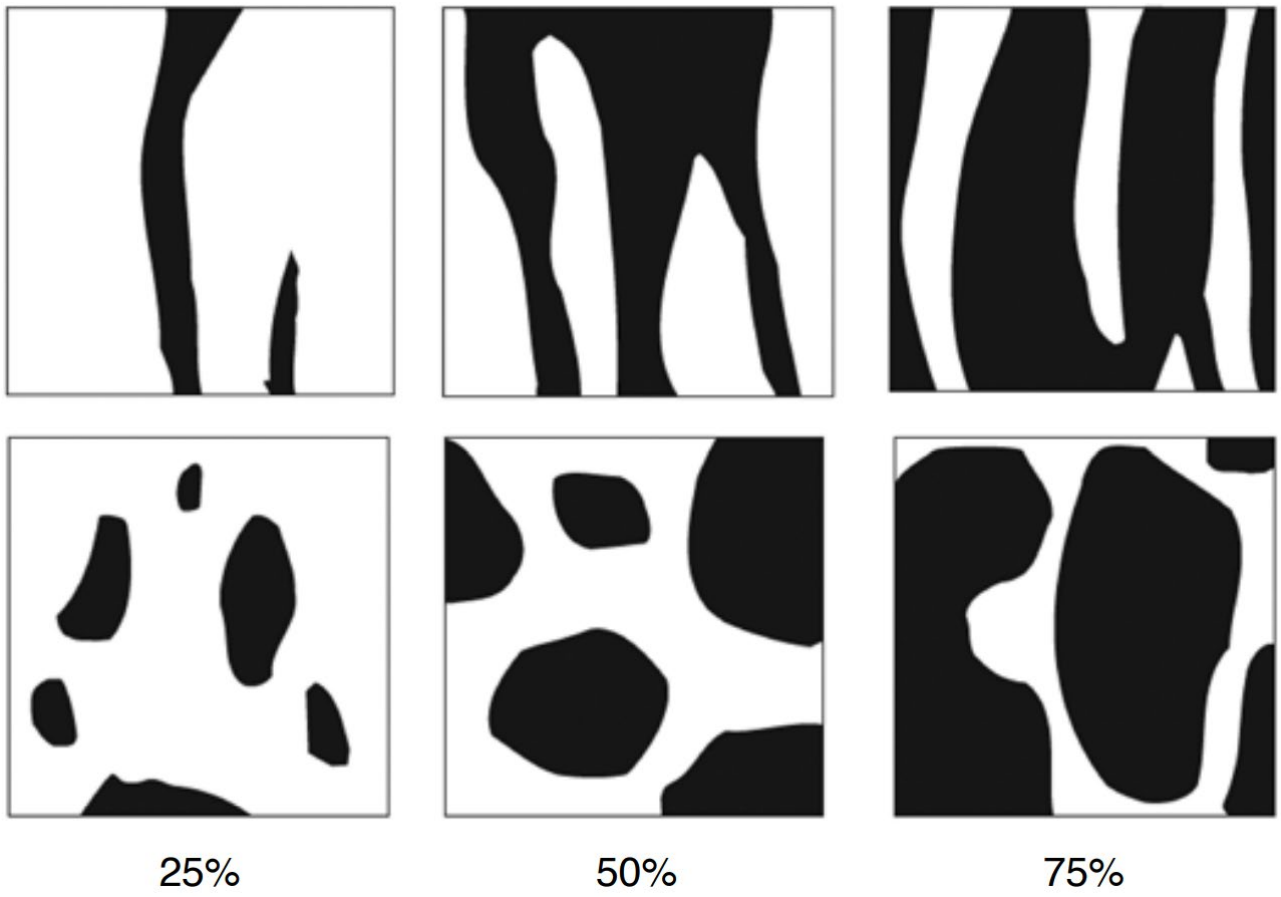


Figure 2-4: Proportion of total area coverage (AMSA, 2014)

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.

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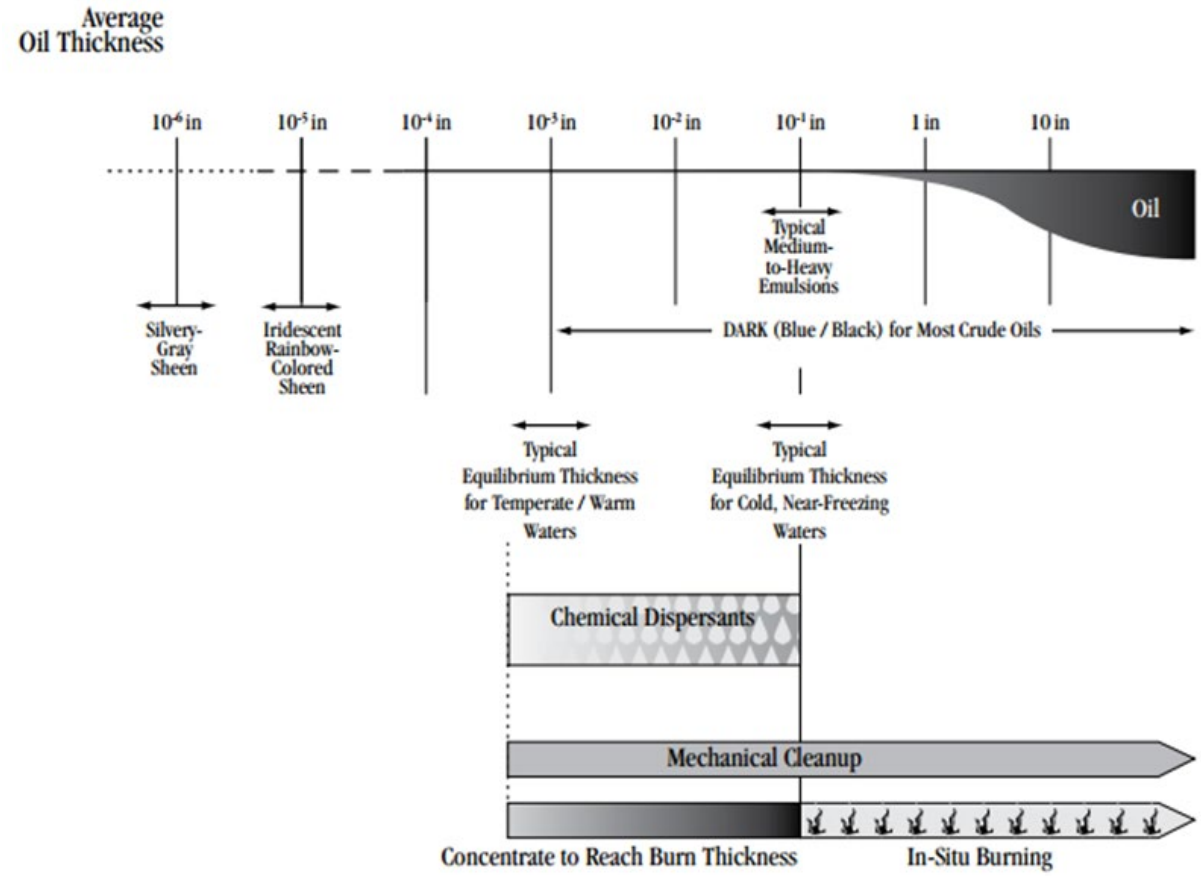


Figure 2-5: Oil thickness versus potential response options (from Allen & Dale 1996)

Wind and wave influence on the feasibility of response operations are also considered below (adapted from NOAA 2013):

- Mechanical Clean-up: Effectiveness drops significantly because of entrainment and/or splash-over as short period waves develop beyond 2–3 ft. (0.6–0.9m) in height. The ability to contain and recover oil decreases rapidly as the slick thickness becomes less than a thousandth of an inch (0.025 mm) (i.e., very low oil encounter rates). Waves and wind can also be limiting factors for the safe operation of vessels and aircraft.
- Dispersants: Effective dispersion requires a threshold amount of surface mixing energy (typically a few knots of wind and a light chop) to be effective. At higher wind and sea conditions, dispersant evaporation and wind-drift will limit chemical dispersion application effectiveness; and, there is a point (~25-kt winds, 10-ft waves) where natural dispersion forces become greater, particularly for light oils. Because of droplet size versus slick thickness constraints and application dose-rate limitations, dispersants work best on slick thicknesses of a few thousandths (approx. 50 g/m^2) to hundredths of an inch (approx. 250 g/m^2). Improved dispersants, higher dose rates, and multiple-pass techniques may extend the thickness limitation to 0.1 inch (2.5 mm) or more.

As offshore response operations (surface dispersant and containment and recovery) are intended to be undertaken at the thickest part of the slick, 50 g/m^2 and 100 g/m^2 (aligning with the lower limit of BAOAC 4 and midpoint of BAOAC 5) are utilised by Woodside when using deterministic modelling (if required) to identify the most likely locations for surface dispersant application and containment and recovery operations.

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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	5,000-10,000

**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 10,000 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 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 thresholds described above are compared with the modelling results for the WCCS (Table 2-5).

2.3.4 Spill modelling results

2.3.4.1 Stochastic modelling results

The scenarios listed in Table 2 1 have been stochastically modelled. The receptors predicted to be contacted by surface (floating) and shoreline exposure values, together with the probability and timing of the contact, and any associated accumulated volumes, are detailed in Table 2-5.

This table covers floating and shoreline contact as it is relevant for planning spill clean-up. Contact within the water column, i.e. the predicted presence of dissolved and entrained hydrocarbons, is relevant for planning operational and scientific monitoring (OSM) activities. As such, these results are included in the OSM planning assessment in ANNEX C, Table C - 1.

It should be noted that the receptor polygons utilised by the modelling software overlap in some cases. This can result in the same shoreline accumulation being captured under a number of receptors. Where this has occurred, the receptors have been grouped and one accumulation listed.

2.3.4.2 Deterministic modelling results

Based upon the stochastic modelling results (Table 2-5), and as discussed in Section 2.3.2, neither scenario meets the trigger criteria for undertaking deterministic modelling, i.e. they do not meet the minimum exposure values required for feasible offshore and shoreline clean-up, or the criteria for OSM deterministic modelling. As such, no deterministic modelling has been undertaken for this Petroleum Activity.

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Table 2-5: Stochastic modelling results – probability and timing of surface and shoreline exposure values

	Probability (%) of floating oil contacting a receptor cell at	Minimum time (days) for contact by floating oil at	Probability (%) of floating oil contacting a receptor at	Minimum time (days) for contact by floating oil at	Probability (%) of floating oil contacting a receptor at	Minimum time (days) for contact by floating oil at	Probability (%) of oil accumulating on any shoreline at	Minimum time (days) for accumulation on shoreline at	Probability (%) of oil accumulating on any shoreline at	Minimum time (days) for accumulation on shoreline at	Probability (%) of oil accumulating on any shoreline at	Minimum time (days) for accumulation on shoreline at	Max accumulated volume (m^3) – averaged	Max accumulated volume (m^3) – worst replicate
	≥ 1 g/m²	≥ 1 g/m²	≥ 10 g/m²	≥ 10 g/m²	≥ 50 g/m²	≥ 50 g/m²	≥ 10 g/m²	≥ 10 g/m²	≥ 100 g/m²	≥ 100 g/m²	≥ 1,000 g/m²	≥ 1,000 g/m²		
Credible Scenario-01														
Scott Reef NR	5.5	0.17	2.5	0.21	1	0.21	6.5	0.42	3.5	0.42	NC	NC	2	80
Sandy Islet	7.5	0.33	1.5	0.33	0.5	0.38	6.5	0.42	3.5	0.42	NC	NC	2	80
Scott Reef North	100	0.04	100	0.04	100	0.04	NA	NA	NA	NA	NA	NA	NA	NA
Scott Reef South	26	0.04	16.5	0.04	8	0.04	6.5	0.42	3.5	0.42	NC	NC	2	80
Seringapatam Reef	4.5	1.29	0.5	1.58	<0.5	NC	NA	NA	NA	NA	NA	NA	NA	NA
Credible Scenario-02														
Ashmore Reef MP	<0.5	NC	<0.5	NC	<0.5	NC	0.5	16.75	0.5	17.21	NC	NC	<1	11
Scott Reef NR	4.5	0.88	1	0.92	<0.5	NC	2	2.21	1	2.25	NC	NC	<1	10
Ashmore Reef	<0.5	NC	<0.5	NC	<0.5	NC	0.5	16.75	0.5	17.21	NC	NC	<1	11
Sandy Islet	1	2.17	<0.5	NC	<0.5	NC	2	2.21	1	2.25	NC	NC	<1	10
Scott Reef North	2.5	1.54	0.5	1.54	<0.5	NC	NA	NA	NA	NA	NA	NA	NA	NA
Scott Reef South	6	0.58	2	0.62	<0.5	NC	2	2.21	1	2.25	NC	NC	<1	10
Seringapatam Reef	1.5	3.42	<0.5	NC	<0.5	NC	NA	NA	NA	NA	NA	NA	NA	NA

Key:			
NC	No contact		Submerged receptor
NA	Not applicable	^^	Results are at an exposure value of 250 g/m^2 – conservative as probability for 1,000 g/m^2 will be lower and time to contact longer

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3 IDENTIFY RESPONSE PROTECTION AREAS (RPAS)

In a response, monitor and evaluate – including trajectory modelling and vessel/aerial observations – would be used to predict RPAs that may be impacted. For the purposes of planning and appropriately scaling a response, modelling has been used to identify RPAs as outlined below in Figure 3-1.

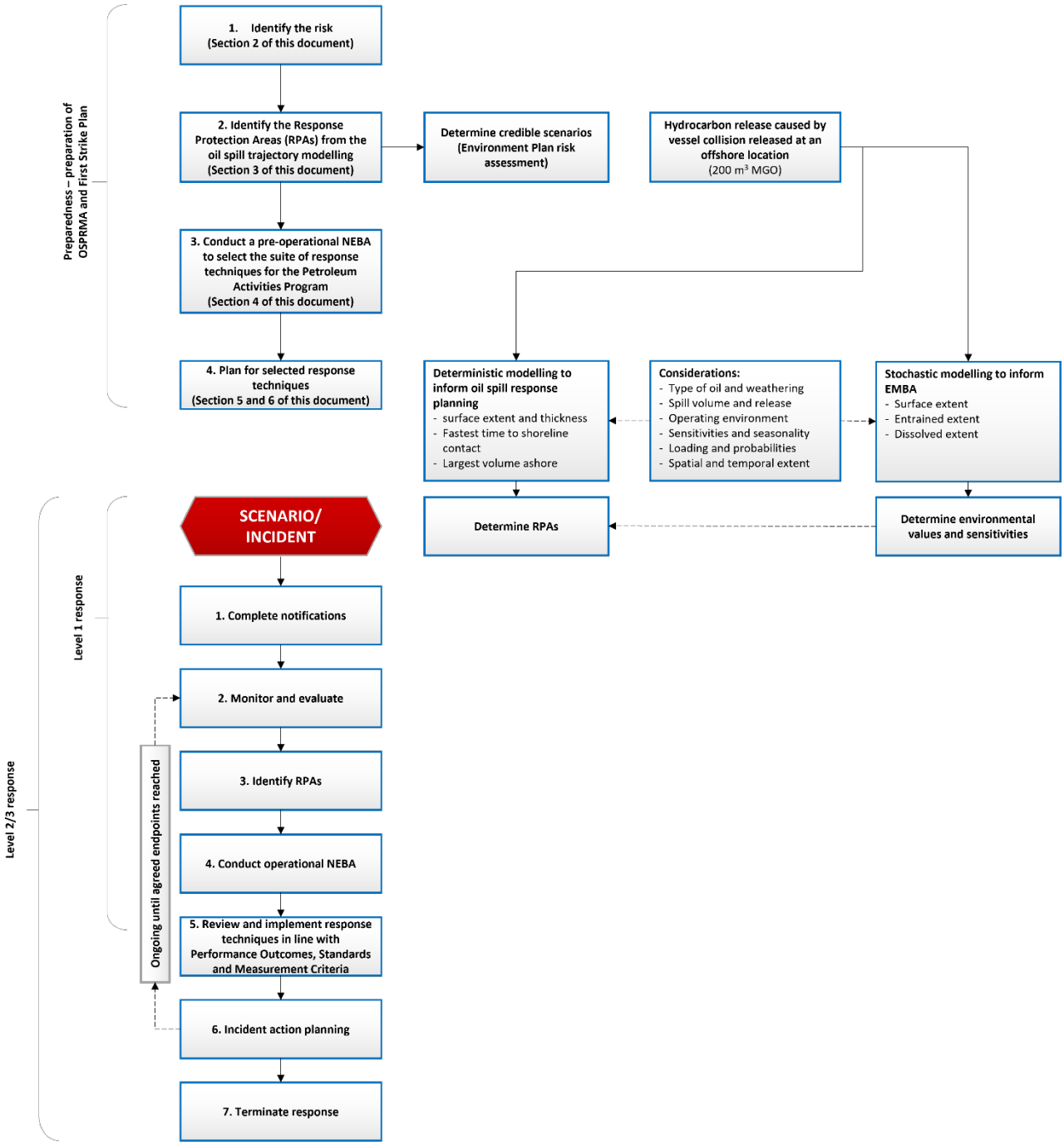


Figure 3-1: Identify Response Protection Areas (RPAs) flowchart

3.1 Identified sensitive receptor locations

Section 6.9.2 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 exposure values

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- receptors within the EMBA which meet the following:
  - a number of priority protection criteria/categories
  - International Union for Conservation of Nature (IUCN) marine protected area categories
  - high conservation value habitat and species
  - important socio-economic/heritage value.

3.2 Identify Response Protection Areas (RPAs)

RPAs have been selected on the basis of their environmental ecological, social, economic, cultural and heritage values and sensitivities and the ability to conduct a response based on the minimum response exposure values (Section 2.3.3). It is important to note that the results outlined in Table 3-1 are the combined results of the individual worst-case runs and do not indicate a single worst case credible scenario (where the timings and volumes are all expected from one release).

From the identified sensitive receptors described in Section 6.9.2 of the EP, only those which a shoreline response could feasibly be conducted (accumulation ≥100 g/m^2 for shoreline assessment and/or contact with surface slicks ≥10 g/m^2 for monitor and evaluate and/or oiled wildlife response) have been selected for response planning purposes. While not discounting other sensitivities, these RPAs have been used as the basis for demonstrating the capability to respond to the nature and scale of a spill from the WCCS and prioritising response techniques.

Table 3-1 outlines Response Protection Areas (RPAs) identified for feasible shoreline clean-up from the WCCS stochastic modelling results (CS-01). The full list of sensitive receptors potentially contacted from stochastic modelling (as per EMBA definition) are presented in the existing environment description (Section 4 of the EP) and impact assessment section (Section 6 of the EP) for each respective spill scenario.

The pre-operational NEBA (Annex A) includes additional RPAs contacted at lower exposure values to allow consideration of all feasible response techniques in the planning phase.

The RPAs identified in Table 3-1 are used to plan for the nature and scale of a shoreline response.

Table 3-1: Response Protection Areas (RPAs) from deterministic modelling

Response protection area	Conservation status	IUCN protection category	Minimum time to shoreline contact (above 100 g/m^2) in days [4]	Maximum shoreline accumulation (above 100 g/m^2) in m^3 [5]
Scott Reef South (including Sandy Islet)	Nature Reserve	N/A	3.5	0.4 days (10 hours)

4 This volume and time represent the first time to contact on defined shoreline polygon and the maximum volume ashore for that 24 hour period.

5 This volume and time represent the maximum volume ashore on defined shoreline polygon

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4 NET ENVIRONMENTAL BENEFIT ANALYSIS (NEBA)

A Net Environmental Benefit Analysis (NEBA) is a structured process to consider which response techniques are likely to provide the greatest net environmental benefit.

The NEBA process is stage 3 of the preparedness process and 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 both in the planning/preparedness process and during a response

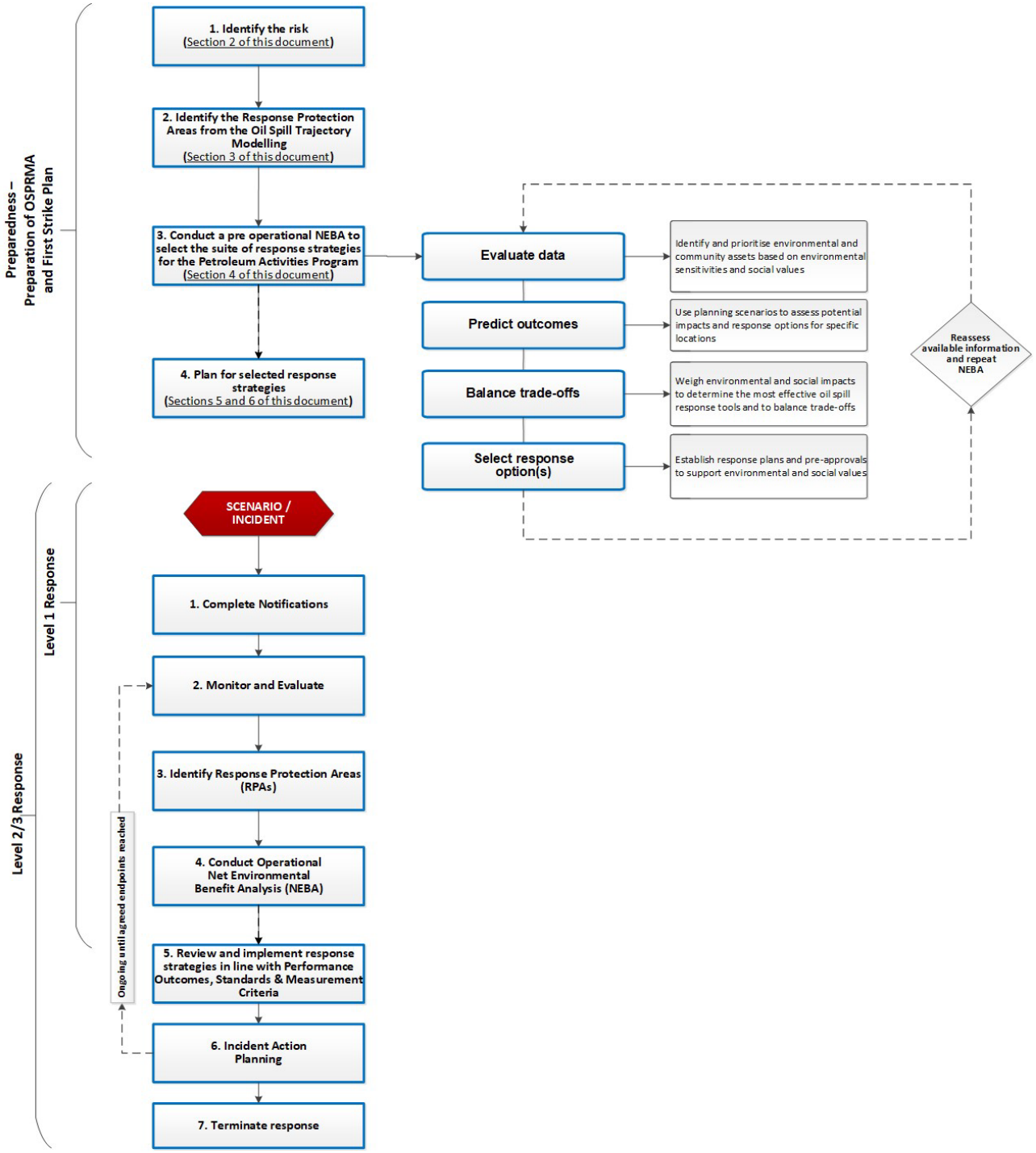


Figure 4-1: Net Environmental Benefit Analysis (NEBA) flowchart

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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 exposure values (Section 2.3.3) and the surface concentrations (Section 2.3.3.1).

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 Petroleum Activity are contained in ANNEX A: Net Environmental Benefit Analysis detailed outcomes.

4.2 Stage 1: Evaluate data

Woodside identifies and prioritises environmental and community assets based on environmental sensitivities and social values, informed through the use of trajectory modelling. Interpretation of stochastic oil spill modelling determines the EMBA for the release, which defines the spatial area that may be potentially impacted by the Petroleum Activity activities.

4.2.1 Define the scenario(s)

Woodside uses scenarios identified from the risk assessment in the EP to assess potential impacts and response options for specific locations. The WCCS is then selected for deterministic modelling (if required) 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 exposure values and deterministic modelling (if required) are then used to assess the feasibility/effectiveness and scale of the response. Modelling results are available in Table 2-5 and Table 3-1.

4.3 Stage 2: Predict Outcomes

Woodside uses planning scenarios to assess potential impacts and response options for specific locations. Locations with potential environmental impacts, selected from the stochastic modelling are included for assessment. Response exposure values and deterministic modelling are then used to assess the feasibility/ effectiveness of a response.

4.4 Stage 3: Balance trade-offs

Woodside considers environmental impacts and response effectiveness/ feasibility to determine the most effective oil spill response tools and balance trade-offs, using an automated NEBA tool. The tool considers potential benefits and impacts associated with a response at sensitive receptors and then considers the effectiveness/ feasibility of the response to select the response techniques carried forward to the ALARP assessment. The NEBA can be found in ANNEX A: Net Environmental Benefit Analysis detailed outcomes.

4.5 Stage 4: Select Best Response Options

To select the response technique, all the other stages in the NEBA process are considered and used to establish response plans and any pre-approvals to support protection of identified environmental and social values.

The response techniques implemented may vary according to a particular spill. The hydrocarbon type released and the sensitivities of the receptors (both ecological and socio-economic) may influence the response. The pre-operational NEBA broadly evaluates each response technique and supports decisions on whether they are feasible and of net environmental benefit. Response techniques that are not feasible or beneficial are rejected at this stage and not progressed to planning.

Further risks and impacts from implementing these selected response options are outlined in Section 7.

4.5.1 Determining potential response options

The available response techniques based on current technology can be summarised under the following headings:

- Monitor and evaluate
- Source control via vessel Shipboard Oil Pollution Emergency Plan (SOPEP)

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- 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

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.

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Table 4-1: Response technique evaluation – vessel collision

Response Technique	Effectiveness	Feasibility	Decision	Rationale for the decision
Hydrocarbon: MGO				
Monitor and evaluate	Will be effective in tracking the location of the spill, informing when it has entered State Waters, predicting potential impacts and triggering further monitoring and response techniques as required. Monitoring techniques include: • Predictive modelling of hydrocarbons – used throughout spill. 'Ground-truthed' using the outputs of all other monitoring techniques. • Surveillance and reconnaissance to detect hydrocarbons and resources at risk – from outset of spill. • Pre-emptive assessment of sensitive receptors at risk – triggered once operational monitoring informs likely RPAs at risk.	Monitoring of an MGO spill is a feasible response technique and outputs will be used to guide decision making on the use of other monitoring/response techniques and providing information to regulatory agencies including AMSA and the Western Australian (WA) Department of Transport and Major infrastructure (DTMI). Practicable techniques that could be used for this scenario include predictive modelling, surveillance and reconnaissance and monitoring of hydrocarbon presence in water.	Yes	Monitoring the spill will be necessary to: • validate trajectory and weathering models • determine the location and state of the slick • provide forecasts of spill trajectory • determine appropriate response techniques • determine effectiveness of response techniques • confirm impact pathways to receptors • provide regulatory agencies with required information.
Source control via vessel SOPEP	Controlling the spill of MGO at source would be the most effective way to limit the quantity of hydrocarbon entering the marine environment.	A spill of MGO from a vessel collision will be instantaneous and source control will be limited to what the vessel or facility can safely achieve whilst responding to the incident.	Yes	Ability to stop the spill at source will be dependent upon the specific spill circumstances and whether or not it is safe for response personnel to access/isolate the source of the spill.
Surface dispersant application	Application of surface dispersant would likely reduce the volumes of hydrocarbons contacting sensitive surface receptors. Dispersant can also enhance biodegradation and may reduce volatile organic compounds (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 predicts that floating oil will reach the minimum feasible exposure value at which to commence surface dispersant application (≥50 g/m^2) at Scott Reef North, this technique is not suitable for MGO spills as this hydrocarbon is prone to rapid spreading and evaporation and are not considered effective when applied on thin surface films such as MGO as the dispersant droplets tend to pass through the surface films without binding to the hydrocarbon resulting in the unnecessary addition of chemicals to the marine environment. The volatile nature of MGO is also likely to lead to unsafe conditions in the vicinity of fresh hydrocarbon thus this response technique is deemed inappropriate.	No	The application of dispersant to MGO is unnecessary as the MGO will rapidly evaporate and would thus unnecessarily introduce additional chemical substances to the marine environment. The additional entrainment would also increase exposure of subsea species and habitats to hydrocarbons.
Mechanical dispersion	Mechanical dispersion involves the use of a vessel's prop wash and/or fire hose to target surface hydrocarbons to achieve dispersion into the water column. However, this technique is of limited benefit in an open ocean environment where wind and wave action are likely to deliver similar advantages.	Although the technique is feasible, highly volatile hydrocarbons are likely to weather, spread and evaporate quickly. The volatile nature of the oil likely to lead to unsafe conditions in the vicinity of fresh hydrocarbon. Additionally, any vessel used for mechanical dispersion activities would be contaminated by the hydrocarbon and could potentially cause secondary contamination of unimpacted areas when exiting the spill area. The decontamination of a vessel used for mechanical dispersion activities would result in additional quantities of oily waste requiring appropriate handling and treatment.	No	Given the limited benefit of mechanical dispersion over natural wind and wave action, secondary contamination and waste issues, and the associated safety risk of implementing the response for this activity, this strategy is deemed unsuitable.
In situ burning	In situ burning is only effective where minimum slick thickness can be achieved.	Use of in situ burning as a response technique for MGO is unfeasible as the minimum slick thickness cannot be attained due to rapid spreading. In addition, there is a limited window of opportunity in which this technique can be applied (prior to evaporation of the volatiles) which is unlikely to be achieved. Furthermore, entering a volatile environment to undertake this technique would be unsafe for response personnel and its used would unnecessarily cause an increase in the release of atmospheric pollutants.	No	Diesel characteristics are not appropriate for the use of in situ burning and would unnecessarily cause an increase in the release of atmospheric pollutants.
Containment and recovery	Containment and recovery has an effective recovery rate of 5-10% when a hydrocarbon encounter rate of 25-50% is achieved at BAOAC 4 and 5 with a 50-100% coverage of 100–200 g/m^2.	Whilst modelling predicts that floating oil will reach the minimum feasible exposure value at which to commence containment and recovery (50 g/m^2) at Scott Reef North, this technique is not suitable for MGO spills as it is prone to rapid spreading and evaporation and is deemed unsuitable for effective containment and recovery operations. The volatile nature of MGO is also likely to lead to unsafe conditions in the vicinity of the hydrocarbon thus this response technique is deemed inappropriate.	No	Containment and recovery would be an inappropriate response technique for a spill of Marine Gas Oil (MGO). Corralling a volatile hydrocarbon such as MGO is deemed unsafe for response personnel thus this response strategy is not considered feasible. In addition to the safety issues, most of the spilled MGO would have been subject to rapid evaporation prior to the commencement of containment and recovery operations.

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Response Technique	Effectiveness	Feasibility	Decision	Rationale for the decision
Shoreline protection and deflection	Shoreline protection and deflection can be effective at preventing contamination of at-risk areas.	A MGO spill would be prone to rapid spreading and evaporation. Modelling predicts that whilst one shoreline receptor will be contacted at the response exposure value, this will occur within 10 hours, which is faster than shoreline protection teams could be deployed. Furthermore, the volatile nature of MGO is also likely to lead to unsafe conditions in the vicinity of the hydrocarbon. Operational monitoring will, however, be deployed from the outset of a spill to track the spill location and fate in real-time.	No	Although spill modelling predicts shoreline contact at Scott Reef within 10 hours, this timeframe is insufficient to mobilise and deploy shoreline protection and deflection equipment to such a remote location. Tidal influences, lack of safe access, and the absence of suitable anchoring points further limit the practicability of effective boom placement. Given these operational constraints, the deployment of this technique is considered unlikely to achieve meaningful protection and could cause greater environmental harm than the spill itself through physical disturbance to sensitive reef habitats.
Shoreline clean-up	Shoreline clean-up is an effective means of hydrocarbon removal from contaminated shorelines where coverage is at an optimum level of 250 g/m^2.	Spill modelling predicts shoreline contact above the response exposure value at one receptor location (Scott Reef South (including Sandy Islet)). Shoreline clean-up is therefore a feasible response technique for this scenario, where it is safe and practical to implement. However, an MGO spill would be prone to rapid spreading and evaporation and intrusive activities such as physical removal of waste can cause greater impacts than the oil alone. Secondary impacts can be minimised through the use of trained personnel to lead operations. Logistically, clean-up operations will require site access, decontamination, waste storage, personal protective equipment, catering and transport services to support personnel working on shorelines, which will be challenging and possibly lead to additional impacts at the remote location of Scott Reef. Monitor and evaluate activities will be deployed from the outset of a spill to track the spill location and fate in real-time to inform the need for and scale of clean-up operations.	Yes	While shoreline clean-up is a feasible technique, it is considered a secondary response strategy for this scenario. Shoreline clean-up activities can result in physical disturbance to sensitive shoreline habitats and intrusive activities require careful site-specific planning to minimise secondary impacts such as habitat disturbance, erosion and spreading of oil. Given the high rates of natural dispersion and biodegradation of MGO, and the significant logistical challenges of accessing and sustaining operations at the remote location of Scott Reef, this technique would only be used if an Operational NEBA indicated it would provide an overall benefit to the environment. Where it is safe and practical to implement, shoreline clean-up will be undertaken as directed by OM6: Shoreline Clean-up Assessment recommendations.
Oiled wildlife response	Oiled wildlife response is an effective response technique for reducing the overall impact of a spill on wildlife. This is mostly achieved through hazing to prevent additional wildlife from being contaminated and through rehabilitation of those already subject to contamination.	Due to the likely volatile atmospheric conditions surrounding a MGO spill, response options may be limited to hazing to ensure the safety of response personnel. The modelling undertaken predicts that no sensitive areas will be impacted thus it is unlikely that this technique would be required. Monitor and evaluate will, however, be deployed from the outset of a spill to track the spill location and fate in real-time. Thus, in the event that wildlife are at risk of contamination, oiled wildlife response will be undertaken in accordance with the Wildlife Response Operational Plan as and where required. In addition, any rehabilitation could only be undertaken by trained specialists.	Yes	The modelling undertaken predicts that no sensitive areas will be impacted thus it is unlikely that this technique would be required. However, in the event that wildlife are at risk of contamination, oiled wildlife response will be undertaken as and where required.

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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 A382148* (2026) 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/ Spill Impact Mitigation Assessment (SIMA), Woodside conducts a structured, semi-quantitative hydrocarbon spill process which has the following steps:

- considers the Response Planning Need identified in terms of surface area (km^2) and available surface hydrocarbon volumes (m^3) against existing Woodside capability
- 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.
- 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:

- a structured process for identifying and considering alternative, additional, and improved options has been completed for each selected response technique
- 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.
- where an alternative, additional and/or improved control measure is adopted, a measurable level of environmental performance has been assigned
- 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
- 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

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- 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.

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5.1 Monitor and evaluate

Monitor and evaluate includes the gathering and evaluation of data to inform the oil spill response planning and operations. It includes fate and trajectory modelling, spill tracking, weather updates and field observations. This response option is deployed in some capacity for every event.

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 (desktop)

Woodside maintains an Operational Monitoring Operational Plan. If shoreline contact is predicted, Response Protection Areas (RPAs) will be identified and assessed before contact. If shorelines are contacted, a shoreline assessment survey (SCAT) will be completed to guide effective shoreline clean-up operations per arrangements detailed in Woodside's Operational and Scientific Monitoring Bridging Implementation Plan (OSM-BIP) (see Section 5.6). This plan includes the process for the CIMT to mobilise resources depending on the nature and scale of the spill.

The proximity of Broome/ Port Hedland to the spill event location means that multiple logistical options are available to monitor the spill in relatively short timeframes. The primary mobilisation base for initial monitoring activities would be Broome/ Port Hedland. However, in the unlikely event of an extended spill with potential to impact receptors further afield, monitoring activities may also be mobilised from Exmouth, Dampier or Karratha.

5.1.1 Response need based on predicted consequence parameters

The following statements identify the key parameters upon which a response need can be based:

- Floating surface oil in sufficient concentrations for effective operational monitoring is expected to be present with surface concentrations of 50 g/m^2 extending up to 22 km, 10 g/m^2 up to 51 km and 1 g/m^2 up to 157 km from the release location, respectively, for scenario CS-01.
- The shortest timeframe for shoreline accumulation (≥10 g/m^2) is predicted at 0.4 days (10 hours) at Scott Reef South (CS-01).
- The fastest time to contact for oil at concentrations of dissolved hydrocarbons greater than 10 ppb at shoreline receptors is 1 hour at Scott Reef North and Scott Reef South.
- Arrangements for support organisations who provide specialist services or resources should be tested regularly.
- Plans, procedures and support documents need to be in place for Operational and Support Sections. These should be reviewed and updated regularly.
- The duration of the spill would be instantaneous with response operations extending until surface hydrocarbons are no longer visible, and no additional response or clean-up of wildlife or habitats is predicted.

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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 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 5.8)
1	Oil spill trajectory modelling	1.1	Initial modelling available within 6 hours using the Rapid Assessment Tool	1, 3B, 3C, 4
		1.2	Detailed modelling available within 4 hours of RPS 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 common operating picture (COP) daily to improve the accuracy of other Operational Monitoring techniques.	1, 3B, 4
3	Satellite imagery	3.1	Contract in place with 3rd party provider to enable access and analysis of satellite imagery. Imagery source/type requested on activation of service.	1, 3C, 4
		3.2	3rd party provider will confirm availability of an initial acquisition within 2 hours	1, 3B, 3C, 4
		3.3	First image received with 24 hours of Woodside confirming to 3rd party provider its acceptance of the proposed acquisition plan.	1
		3.4	3rd party provider to submit report to Woodside per image. Report is to include a polygon of any possible or identified slick(s) with metadata.	1
		3.5	Data received to be uploaded into Woodside COP daily to improve accuracy of other Operational Monitoring techniques.	1, 3B, 4
		3.6	Satellite Imagery services available and employed during response	1, 3C, 4
4	Aerial surveillance	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 2 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 FSP. Observers report available to the IMT within 2 hours of landing after each sortie.	1, 2, 3B, 4
		4.4	Unmanned Aerial Vehicles/Systems (UAV/UASs) to support Shoreline Contamination Assessment Technique (SCAT), containment and recovery and surface dispersal and pre-emptive assessments as contingency if required.	1, 2
5	Pre-emptive assessment	5.1	Desktop pre-emptive assessment of sensitive receptors to help determine Response Protection Areas (RPAs) to guide deployment of response personnel	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 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 5.8)
	of sensitive receptors	5.2	If response personnel are deployed, provide daily reports to the IMT on the status of RPAs and maximise the effective use 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 activities up to and including the identified WCCS. This is demonstrated by the following:

- Woodside has a documented, structured and tested capability for Operational Monitoring operations including internal trajectory modelling capabilities, tracking buoys located offshore and contracted aerial observation platforms with access to trained observers.
- Woodside and its third-party service providers seek to maintain 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.

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5.2 Source Control via vessel Shipboard Oil Pollution Emergency Plan (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 Petroleum Activity 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 International Maritime Organization (IMO) Resolution MEPC.54 (32) adopted on 6 March 1992, as amended by resolution MEPC.86 (44) adopted on 13 March 2000.

Its purpose is to set in motion the necessary actions to stop or minimise oil discharge and mitigate its effects and outlines responsibilities, pollution reporting requirements, procedures and resources needed in the event of a hydrocarbon spill from vessel activities.

In the event of the WCCS vessel collision event, the vessel master may engage precautionary marine manoeuvres to avoid collision or commence pumping operations to transfer MGO 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 Petroleum Activity which are detailed in Section 6.9 of the EP. The vessel master's roles and responsibilities are described in Section 7.3 of the EP.

Performance standards for each contracted Petroleum Activity vessel are detailed in the vessel's specific SOPEP.

These standards maintain availability of sufficient resources and are adequately tested for successful implementation of the SOPEP in the event of a hydrocarbon spill.

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5.3 Shoreline Clean-up

Shoreline clean-up may be undertaken using a broad range of techniques when floating hydrocarbons contact shorelines. The timing, location and extent of shoreline clean-up activities can vary from one scenario to another, depending on the hydrocarbon type, sensitivities and values contacted, shoreline type and access, degree of oiling, and area oiled.

Shoreline clean-up is typically undertaken as a three-phase process:

- Phase 1 (gross contamination removal) involving the collection of bulk oil, either floating against the shoreline or stranded on it
- Phase 2 (moderate to heavy contamination removal) involving removal or in-situ treatment of shoreline substrates such as sand or pebble beaches, and
- Phase 3 (final treatment or polishing) involving removal of the remaining residues of oil.

As phase 1 typically involves recovery of floating and pooled oil, and phase 3 removes minor volumes, they have not been considered in the assessment of response need for the scenarios identified.

The Shoreline Clean-up Operational Plan details the mobilisation and resource requirements for a shoreline clean-up operation including the logistics, support and facility arrangements to manage the movement of personnel and resources.

The Shoreline Clean-up Operational Plan includes the process for the IMT to mobilise resources depending on the nature and scale of the spill. Woodside would activate and mobilise trained and competent personnel in shoreline assessment before or following shoreline contact at response exposure values.

Shoreline clean-up consists of different manual and mechanical recovery techniques to remove hydrocarbons and contaminated debris from a shoreline; this is to minimise ongoing environmental contamination and impact. The National Plan also provides guidance on shoreline clean-up techniques as outlined in National Plan Guidance Response assessment and termination of cleaning for oil contaminated foreshores (AMSA 2015).

5.3.1 Response need based on predicted consequence parameters

The following statements identify the key parameters upon which the response need can be based:

- The fastest time to shoreline contact is predicted to be 0.4 days at Scott Reef South (including Sandy Islet) with shoreline accumulation averaging 2 m^3 (across all replicate simulations) and up to 80 m^3 in the worst replicate simulation (the single worst run).
- MGO is likely to be difficult to remove given its light nature and high weathering potential. It can be readily washed from sediments by wave and tidal flushing. The likely waste products from an MGO spill shoreline response would be contaminated sand and debris.
- The duration of the spill would be instantaneous with response operations extending surface hydrocarbons are no longer visible, and no additional response or clean-up of wildlife or habitats is predicted.
- Desktop pre-emptive assessment and shoreline assessments (OM6: Shoreline Clean-up Assessment via the Woodside OSM-BIP) will be mobilised prior to shoreline clean-up operations to determine the appropriateness of clean-up tactics. Selection of shoreline clean-up methods and controls to prevent further damage from the clean-up activities are to be undertaken in consultation with the Control Agency and selected based on a NEBA.
- Following Shoreline Assessment and agreement of prioritisation with WA Department of Transport and Major Infrastructure, clean-up operations would commence until agreed termination criteria are reached.
- Arrangements for support organisations who provide specialist services (trained personnel, labour hire, shoreline clean-up, and site management equipment) and/or resources and should be tested regularly.
- Tactical Response Plans (TRPs) for Response Protection Areas (RPAs) along with other relevant plans, procedures and support documents should be in developed and in place for Operational and Support Sections. These should be reviewed and updated regularly.

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In addition, a number of assumptions are required to estimate the response need for shoreline clean-up. These assumptions have been described in the table below.

Table 5-2: Response Planning Assumptions – Shoreline Clean-up

Response planning assumptions: Shoreline clean-up	
Safety considerations	Shoreline clean-up operations cannot be implemented if the safety of response personnel cannot be guaranteed. This requires an initial and ongoing risk assessment of health and safety hazards and risks at the site. Personnel safety issues may include: • hydrocarbon gas and/or liquid exposure • waves and/or sea states, tidal cycle and intertidal zone limits • presence of wildlife • high ambient temperatures.
Operational considerations	Scott Reef/ Sandy Islet presents operational and environmental constraints for shoreline clean-up activities including: • remote location presenting logistical challenges for landing vessels, people and equipment • small sand island within a submerged and emergent reef system presenting challenges for personnel to work with suitable facilities and waste storage • landing and undertaking shoreline clean-up activities is likely to result in damage of any turtle and bird nesting sites that may be present.
Manual shoreline clean-up operation (Phase 2)	One, manual shoreline clean-up operation (Phase 2) may include: • 1–2 x trained supervisor • 8–10 x personnel/ labour hire (possibly smaller teams due to RPA sensitivities) • Supporting equipment for manual clean-up including rakes, shovels, plastic bags etc.
Physical properties	Surface exposure value • Lower – 100 g/m^2 – 100% coverage of ‘stain’ – cannot be scratched off easily on coarse sediments or bedrock – Expected trigger to undertake detailed shoreline survey • Optimum – 250 g/m^2 – 25% coverage of ‘coat’ – can be scratched off with a fingernail on coarse sediments – Expected trigger to commence clean-up operations

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Table 5-3: Shoreline Clean-up techniques and recommendations

Technique	Description	Shoreline type		Application
		Recommended	Not recommended	
Natural recovery	Allowing shoreline to self-clean; no intervention undertaken.	Remote and inaccessible shorelines for personnel, vehicles and machinery. Other clean-up techniques may cause more damage than allowing the shoreline to naturally recover. Natural recovery may be recommended for areas with mangroves and coral reefs due to their sensitivity to disturbance from other shoreline clean-up techniques. High-energy shorelines: where natural removal rates are high, and hydrocarbons will be removed over a short timeframe.	Low-energy shorelines: these areas tend to be where hydrocarbon accumulates and penetrates soil and substrates.	May be employed, if the operational NEBA identifies that other clean-up techniques will have a negligible or negative environmental impact on the shoreline. May also be used for buried or reworked hydrocarbons where other techniques may not recover these.
Manual recovery	Use of manpower to collect hydrocarbons from the shoreline. Use of this form of clean-up is based on type of shoreline.	Remote and inaccessible shorelines for vehicles and machinery. Areas where shorelines may not be accessible by vehicles or machinery and personnel can recover hydrocarbons manually. Where hydrocarbons have formed semi-solid to solid masses that can be picked up manually. Areas where nesting and breeding fauna cannot or should not be disturbed.	Coral reef or other sensitive intertidal habitats, as the presence of a response may cause more environmental damage then allowing them to recover naturally. For some high-energy shorelines such as cliffs and sea walls, manual recovery may not be recommended as it may pose a safety threat to responders.	May be used for sandy shorelines. Buried hydrocarbons may be recovered using shovels into small carry waste bags, but where possible the shoreline should be left to naturally recover to prevent any further burying of hydrocarbons (from general clean-up activities).
Sorbents	Sorbent boom or pads used to recover fluid or sticky hydrocarbons. Can also be used after manual clean-up to remove any residues from crevices or from vegetation.	When hydrocarbons are free-floating close to shore or stranded onshore. As a secondary treatment method after hydrocarbon removal and in sensitive areas where access is restricted.	Access for deploying and retrieving sorbents should not be through soft or sensitive habitats or affect wildlife.	Used for rocky shorelines. Sorbent boom will allow for deployment from small shallow draught vessels, which will allow deployment close to shore where water is sheltered and to aid recovery. Sorbents will create more solid waste compared with manual clean-up, so will be limited to cleaning rocky shorelines.

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Technique	Description	Shoreline type		Application
		Recommended	Not recommended	
Vacuum recovery, flushing, washing	The use of high volumes of low-pressure water, pumping and/or vacuuming to remove floating hydrocarbons accumulated at shorelines.	Suited to rocky or pebble shores where flushing can remobilise hydrocarbons (to be broken up) and aid natural recovery. Any accessible shoreline type from land or water. May be mounted on barges for water-based operations, on trucks driven to the recovery area, or hand-carried to remote sites. Flushing and vacuum may be useful for rocky substrate. Medium- to high-energy shorelines where natural removal rates are moderate to high. Where flushed hydrocarbons can be recovered to prevent further oiling of shorelines.	Areas of pooled light, fresh hydrocarbons may not be recoverable via vacuum due to fire and explosion risks. Shorelines with limited access. Flushing and washing not recommended for loose sediments. High-energy shorelines where access is restricted.	High volume low pressure (HVLP) flushing and washing into a sorbent boom could be used for rocky substrate, if protection booming has been unsuccessful in deflecting hydrocarbons from these areas.
Sediment reworking	Movement of sediment to surf to allow hydrocarbons to be removed from the sediment and move sand via heavy machinery.	When hydrocarbons have penetrated below the surface. Recommended for pebble/cobble shoreline types. Medium- to high-energy shorelines where natural removal rates are moderate to high.	Low-energy shorelines as the movement of substrate will not accelerate the natural cleaning process. Areas used by fauna which could potentially be affected by remobilised hydrocarbons.	Use of wave action to clean sediment: appropriate for sandy beaches where light machinery is accessible.
Vegetation cutting	Cutting vegetation to prevent oiling and reduce volume of waste and debris.	Vegetation cutting may be recommended to reduce the potential for wildlife being oiled. Where oiling is restricted to fringing vegetation.	Access in bird-nesting areas should be restricted during nesting seasons. Areas of slow-growing vegetation.	May be used on shorelines where vegetation can be safely cleared to reduce oiling.
Cleaning agents (oil spill control agent [OSCA])	Application of chemicals such as dispersants to remove hydrocarbons.	May be used for manmade structures and where public safety may be a concern.	Natural substrates and in low-energy environments where sufficient mixing energy is not present.	Not recommended for shorelines. Could be used for manmade structures such as boat ramps.

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5.3.2 Environmental performance based on need

Table 5-4: Environmental Performance – Shoreline Clean-up

Environmental Performance Outcome		To remove bulk and stranded hydrocarbons from shorelines and facilitate shoreline amenity habitat recovery.		
Control measure		Performance Standard		Measurement Criteria (Section 5.8)
6	Shoreline responders	6.1	In liaison with WA DTMI (for Level 2/3 incidents), deployment of 1 shoreline clean-up team to contaminated RPAs comprised of: • 1–2 trained specialists per operation • 8–10 personnel/labour hire (possibly a smaller team due to RPA sensitivities) • Personnel sourced through resource pool within 24–48 hours of request from the IMT.	1, 2, 3A, 3B, 3C, 4
		6.2	Relevant Tactical Response Plans (TRPs) will be identified in the first strike plan for activation within 24 hours.	1, 3A, 3C, 4
		6.3	Clean-up operations for shorelines in line with results and recommendations from SCAT outputs	1, 3A, 3B
		6.4	All shoreline clean-up sites will be zoned and marked before clean-up operations commence to prevent secondary contamination and minimise the mixing of clean and oiled sediment and shoreline substrates.	
		6.5	In liaison with WA DTMI (for Level 2/3 incidents), mobilise and deploy 1 shoreline clean-up operation by Week 1.	1, 2, 3A, 3C, 4 1, 3B, 4
		6.6	The safety of shoreline response operations will be considered and appropriately managed. During shoreline clean-up operations: • All personnel in a response will receive an operational/safety briefing before commencing operations • Gas monitoring and site entry protocols will be used to assess safety of an operational area before allowing access to response personnel	
		6.7	Open communication line to be maintained between IMT and infield operations to ensure awareness of progress against plan(s)	1, 3A, 3B
7	Shoreline clean up equipment	7.1	Contract in place with 3rd party providers to access equipment.	1, 3A, 3C, 4
		7.2	Equipment mobilised from closest stockpile (detail in activity specific ALARP) within 24-48 hours.	
		7.3	Supplementary equipment mobilised from Australian Marine Oil Spill Centre (AMOSC) and State stockpiles within 48 hours.	1, 3C, 4
		7.4	Supplementary equipment mobilised from OSRL within 72 hours (if required).	
8	Management of Environmental Impact of the response risks	8.1	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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Environmental Performance Outcome		To remove bulk and stranded hydrocarbons from shorelines and facilitate shoreline amenity habitat recovery.		
Control measure		Performance Standard		Measurement Criteria (Section 5.8)
		8.2	Shallow draft vessels will be used to access remote shorelines to minimise the impacts associated with seabed disturbance on approach to the shorelines	
		8.3	Shoreline access route (foot, car, vessel and helicopter) with the least environmental impact identified will be selected by a specialist in SCAT operations	
		8.4	Vehicular access will be restricted on dunes, turtle nesting beaches and in mangroves	
		8.5	Removal of vegetation will be limited to moderately or heavily oiled vegetation	
		8.6	Oversight by trained personnel who are aware of the risks	
		8.7	Trained unit leader's brief personnel of the risks prior to operations	

The resulting shoreline clean-up capability has been assessed against the WCCS. The range of techniques provide an ongoing approach to shoreline clean-up at identified RPAs. Woodside's capability can cover all required shoreline clean-up operations for the Petroleum Activity.

Whilst modelling predicts shoreline contact from day 1 (Scott Reef South (including Sandy Islet)) Woodside is satisfied that the current capability is managing risks and impacts to ALARP.

The capability available meets the need identified for this activity. The shoreline clean-up capability has the following expected performance (if required during a response):

- Woodside has the capacity to mobilise and deploy multiple shoreline clean-up teams in week 1 to Scott Reef/ Sandy Islet using existing labour hire contracts with Woodside, AMOSC, Core Group and OSRL team leads, and appropriate shoreline response equipment. However, due to the environmental sensitives of Scott Reef/ Sandy Islet, it may be more appropriate to conduct clean-up activities with one small team over a longer period of time using more passive recovery techniques.
- Assessment of response capability indicates that for a worst-case scenario the actual teams required would meet the available capability and the response would be completed by end month 1, even with the use of smaller teams and passive recovery techniques.
- Woodside has considered deployment of additional personnel to undertake shoreline clean-up operations but is satisfied that the identified level of resource is balanced between environmental sensitivities, cost, time and effectiveness. The most significant constraint on expanding the scale of response operations is the potential ecological impacts of positioning large numbers of clean-up responders on a small, remote island. The numbers of response personnel and techniques employed during any clean-up operation would need to be carefully evaluated via an operational NEBA and evaluate the trade-offs between sending multiple clean-up teams or smaller numbers of teams.
- TRPs have been developed for all identified RPAs excepting international locations.
- Woodside has assessed the existing capability available and considered potential alternative, additional and improved control measures. Where control measures have been selected and implemented, they are included in Section 6.3.

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5.4 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 DTMI State Hazard Plan – Maritime Environmental Emergencies (SHP-MEE). It is the responsibility of DBCA to administer the WAOWRP under the direction of the DTMI. 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 DTMI. 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.

5.4.1 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 exposure values for floating and shoreline oil for the external coating of wildlife to be 10 g/m^2 for floating, and 100 g/m^2 for shoreline accumulation. It should however be noted that toxicity exposure values for wildlife are likely to be highly variable due to differences in species sensitivity, type of hydrocarbon, type of exposure (ingestion or external oiling), life-stage, and on-water versus land habitat.

For planning purposes, determination of wildlife priority protection areas is based on stochastic modelling of the worst-case spill scenarios at 10 g/m^2 for floating, and 100 g/m^2 for shoreline accumulation (acknowledging that impacts to wildlife may occur at lower concentrations), the known presence of wildlife, and in consideration of:

- 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 5-5 outlines the wildlife response areas for this activity. At the time of a spill, identification and allocation of wildlife RPAs should also take into consideration any key biological activities. Additional detail regarding species and their key biological activities within the vicinity of the Petroleum Activity are described in Section 4 of the Environment Plan.

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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 5-5: Key at-risk species potentially in RPAs and open ocean (CS-01)

Species	Scott Reef South (including Sandy Islet)	Scott Reef North	Seringapatam Reef	Open Ocean	Scott Reef South (including Sandy Islet)
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:

- The shortest timeframe for floating oil at ≥10 g/m^2 is predicted at Scott Reef North and Scott Reef South within 1 hour for CS-01.
- The shortest timeframe for shoreline accumulation at the minimum required exposure values (≥100 g/m^2) is predicted to be 10 hours at Scott Reef South (including Sandy Islet) (80 m^3 worst-case individual simulation).
- 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 operational 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 is 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 5-6).

Table 5-6: 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

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that cannot be retrieved and integration with operational and 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 (DBCA 2022b).

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.

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5.4.2 Environmental performance based on need

Table 5-7: Environmental Performance – Oiled Wildlife Response (OWR)

Environmental Performance Outcome		OWR is conducted in accordance with the Western Australian Oiled Wildlife Response Plan (WAOWRP, 2022) to meet legislative requirements to house, release or euthanise wildlife under the *Biodiversity Conservation Act 2016*.		
Control measure		Performance Standard		Measurement Criteria (Section 5.8)
9	Wildlife response arrangements	9.1	Oiled Wildlife Operational Plan in place and utilised during a response to plan, coordinate, implement and terminate operations	1, 3A, 4
		9.2	Initiate a wildlife first strike response within 24 hours of confirmed or imminent wildlife contact as directed by Operational Monitoring Plan (OMP): Marine Fauna Assessment and in liaison with DBCA.	1
10	Wildlife response equipment	10.1	Maintain contract with AMOSC for immediate access to oiled wildlife response equipment.	1, 3C, 4
		10.2	Maintain contract with OSRL to access additional oiled wildlife response equipment.	1, 3C, 4
11	Wildlife responders	11.1	Two Oiled Wildlife Team Members to supervise the oiled wildlife operations who have completed an OWR Management course.	1, 2, 3B
		11.2	Maintain contract with AMOSC for immediate access to trained oiled wildlife response specialists	1, 3B, 3C
		11.3	Maintain contract with OSRL to access additional trained OWR specialists	1, 3B, 3C
		11.4	Open communication line to be maintained between IMT and infield operations to ensure awareness of progress against plan(s).	1, 3A, 3B
12	Management of environmental impacts of response risks	12.1	Oiled wildlife operations (including hazing) would be implemented with advice and assistance from the Oiled Wildlife Advisor from the DBCA, and in accordance with the processes and methodologies described in the WA Oiled Wildlife Response Plan (OWRP) and the relevant regional plan.	1

The resulting wildlife response capability has been assessed against the WCCS (CS-01). 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 and/or OM5: Rapid Marine Fauna Assessment 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.

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5.5 Waste Management

Waste management is considered a support technique to wildlife response 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 shoreline clean-up and wildlife response, and/or
- Solids/semi-solids (oily solids, garbage, contaminated materials) and debris (e.g. seaweed, sand, woods, and plastics) collected during shoreline clean-up and wildlife response.

Expected waste volumes during an event are likely to vary depending on oil type, volume released, response techniques employed and how weathering of hydrocarbons. Waste management, handling and capacity should be scalable to maintain continuous response operations.

All waste management activities will follow the Environment Protection (Controlled Waste) Regulations 2004 and the waste will be managed to minimise final disposal volumes. Waste treatment techniques will consider contaminated solids treatment to allow disposal to landfill and solids with high concentrations of hydrocarbon will be treated and recycled where possible or used in clean fill if suitable.

The waste products would be transported from response locations to the nearest suitable staging area/waste transfer station for treatment, disposal or recycling. Waste will be transferred with appropriately licensed vehicles. Containers will be available for temporary waste storage and will be:

- labelled with the waste type
- provided with appropriate lids to prevent waste being blown overboard
- 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.

5.5.1 Response need based on predicted consequence parameters

Table 5-8: Response Planning Assumptions – Waste Management

Response planning assumptions: Waste management	
Waste loading per m^3 oil recovered (multiplier)	Shoreline clean-up (manual) – ~5–10x multiplier for oily solid and liquid wastes generated by manual clean-up.
	Oiled wildlife response – ~1 m^3 of oily solid and liquid waste generated for each wildlife unit cleaned

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5.5.2 Environmental performance based on need

Table 5-9: Environmental Performance – Waste Management

Environmental Performance Outcome		To minimise further impacts, waste will be managed, tracked and disposed of in accordance with laws and regulations.		
Control measure		Performance Standard		Measurement Criteria (Section 5.8)
13	Waste Management	13.1	Contract with waste management services for transport, removal, treatment and disposal of waste	1, 3A, 3B, 3C, 4
		13.2	Access to at least 213 m^3 of solid and liquid waste storage available within 2 days upon activation of 3rd party contract.	
		13.3	Access to up to 2,400 m^3 by day 6.	
		13.4	Recovered hydrocarbons and wastes will be transferred to licensed treatment facility for reprocessing or disposal.	
		13.5	Waste management provider support staff available year-round to assist in the event of an incident with waste management as detailed in contract.	
		13.6	Open communication line to be maintained between IMT and waste management services to ensure the reliable flow of accurate information between parties.	
		13.7	Waste management to be conducted in accordance with Australian laws and regulations	1, 3A, 3B
		13.8	Waste management services available and employed during response	1, 3A, 3B, 3C, 4
14	Management of environmental impacts of response risks	14.1	Teams will segregate liquid and solid wastes at the earliest opportunity.	1, 3A, 3B, 3C, 4

The resulting waste management capability has been assessed against the WCCS. The range of techniques provide an ongoing approach to waste management at identified RPAs.

The largest volumes ashore occur only in Week 1, averaging 2 m^3 (across all replicate simulations) and up to 80 m^3 in the worst replicate simulation (the single worst run). Based on the worst case maximum volume of 80 m^3 ashore, an estimated daily peak of 160-914 m^3 of waste may be generated from shoreline clean-up operations. Woodside has access to 124 m^3 waste storage on day 1,675 m^3 by day 4, and 2,400 m^3 by day 6 therefore the capability available meets the need identified.

It indicates that the waste management capability has the following expected performance:

- Shoreline operations may generate a daily peak of 160-914 m^3 within Week 1. No additional shoreline contact is predicted after Week 1
- Woodside has assessed the existing capability available and considered potential alternative, additional and improved control measures. Where control measures have been selected and implemented, they are included in Section 6.5.
- Woodside's waste contractor has access to ~120,000 m^3 to treat overall waste volumes. The waste management requirements are within Woodside's and its service providers existing capacity.

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5.6 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)** – Is undertaken during the course of the spill and includes any physical, chemical and biological assessments that may guide operational decisions such as selecting the appropriate response and mitigation methods and/or to determine a response activity. This monitoring is additional to the activities (aerial/vessel surveillance, tracking buoys, oil spill trajectory modelling and satellite tracking) performed as part of the Monitor and Evaluate Strategy (Section 5.1). 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. For the Operational Monitoring Plan (OMP) initiation and termination criteria during a Level 2–3 spill event refer to Table 9-1 of the Joint Industry OSM Framework (APPEA [now Australian Energy Producers (AEP)] 2021).
- **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 Scientific Monitoring Plan (SMP) initiation and termination criteria during a Level 2–3 spill event refer to Table 9-2 of the Joint Industry OSM Framework (APPEA [now Australian Energy Producers (AEP)] 2021).

Woodside has developed a Woodside OSM Bridging Implementation Plan (OSM-BIP), 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 (APPEA [now Australian Energy Producers (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 5-10 lists the Joint Industry OMPs and SMPs that are relevant to the Petroleum Activity. The aims/objectives of each OMP and SMP are listed in Tables 5-1 and 6-1 of the Joint Industry OSM Framework respectively. Woodside confirms it has reviewed these aims/objectives and determined they are all appropriate to address the potential impacts, risks and response activities of this activity, noting that dispersant application is not a suitable response strategy for this activity.

The OSM-BIP is structured so that it can provide a flexible framework that can be adapted to individual spill incidents. The Combined OSM Planning Area (refer to Section 2.1 of the OSM-BIP), derived from all Woodside worst-case scenarios, represents the geographical extent of the Woodside OSM-BIP.

The OSM requirements for this activity's credible spill scenarios, including monitoring priorities, implementation timeframes and capability is provided in ANNEX C: Petroleum Activity OSM Activity Specific Requirement and Verification of OSM-BIP Adequacy.

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 (APPEA [now AEP] 2021)) during the 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 5-10: Joint industry OSM plans relevant to Petroleum Activity

Operational Monitoring	Relevant for the activity	Scientific Monitoring	Relevant for the activity
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	✓

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Operational Monitoring	Relevant for the activity	Scientific Monitoring	Relevant for the activity
OM4a: Dispersant Effectiveness Monitoring (Subsea)	×	SM4: Seabirds and Shorebirds Assessment	✓
OM4b: Dispersant Effectiveness Monitoring (Surface)	×	SM5: Marine mega-fauna Assessment	✓
OM5: Rapid Marine Fauna Surveillance	✓	SM6: Benthic habitat Assessment	✓
OM6: Shoreline Clean-up Assessment (SCAT)	✓	SM7: Marine fish and elasmobranch assemblages assessment	✓
		SM8: Fisheries Impact Assessment	✓
		SM9: Heritage Features Assessment	✓
		SM10: Social Impact Assessment	✓

5.6.1 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^2.
- The stochastic run with the shortest timeframe for shoreline accumulation at 100 g/m^2 predicted is 10 hours to Scott Reef South (including Sandy Islet) (CS-01).

In addition, a number of assumptions are required to estimate the response need for SCAT. These assumptions have been described in Table 5-11. Consequently, for planning purposes and based on the modelling results for shortest time to contact at 100 g/m^2 there is one RPA (Scott Reef South (including Sandy Islet)) requiring 2 SCAT specialists. These resourcing requirements can be met via the resourcing arrangements outlined in Table 8-3 of the OSM-BIP.

Table 5-11: Response planning assumptions – SCAT

Response planning assumptions: SCAT	
Safety considerations	Shoreline clean-up operations cannot be implemented if the safety of response personnel cannot be guaranteed. This requires an initial and ongoing risk assessment of health and safety hazards and risks at the site. Personnel safety issues may include: • hydrocarbon gas and/or liquid exposure • waves and/or sea states, tidal cycle and intertidal zone limits • presence of wildlife • high ambient temperatures.
SCAT	Deployment of 2 specialists in SCAT from resource pool for each of the RPAs with predicted impacts

5.6.2 Summary – Operational and scientific monitoring

A detailed OSM preparedness assessment is provided in ANNEX C: Petroleum Activity OSM Activity Specific Requirement and Verification of OSM-BIP Adequacy.

The ALARP assessment for operational and scientific monitoring (Section 6.6 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.

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5.6.3 Environmental performance based on need

Table 5-12: 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 5.8)
15	OSM arrangements	15.1	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
		15.2	OSM Implementation Lead responsible for overseeing implementation of OMP and SMP components in accordance with the Woodside OSM Bridging Implementation Plan.	
16	Access to adequate OSM capability to provide both initial and ongoing monitoring	16.1	Maintain contract with third-party OSM Services Provider to provide access to suitably qualified and competent personnel and equipment to assist in the implementation of monitoring in accordance with the capability and resourcing requirement described in Sections 8–10 of the OSM-BIP and the activity-specific capability assessment in Table C - 8 and Table C - 9 in ANNEX C: Petroleum Activity OSM Activity Specific Requirement and Verification of OSM-BIP Adequacy.	3A, 3B, 3C, 4
		16.2	Obtain monthly capability reports from OSM Service Provider to demonstrate the capability described in Section 10 of the OSM-BIP is available throughout the activity	
		16.3	Annual testing of OSM Service Provider standby arrangements and activation process	
17	Baseline studies assurance	17.1	Annual review of environmental baseline data for all locations where spill modelling has predicted contact at relevant hydrocarbon exposure values within 7 days	3C
18	OSM-BIP maintenance	18.1	Annual review will be conducted according to the criteria in Section 11 of the OSM-BIP	3A, 3B, 3C, 4
19	OSM response	19.1	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 [now AEP] 2021)	1
		19.2	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	
		19.3	If the OSM Implementation Lead identifies that additional monitoring capability is required beyond that described in Section 10 of the OSM-BIP, the need for these resources will be identified as soon as practicable and mobilised through the OSM Services Provider Contract, which includes provisions for scaling up personnel to meet monitoring program requirements	

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		19.4	Decisions regarding co-mobilisation of monitoring teams will be determined following a spill event, as part of the Incident Action Planning process. These decisions will be made by the CIMT in consultation with the OSM Services Provider and relevant stakeholders, with due consideration given to safety, access to sensitive receptors, timing, and data quality requirements	
		19.5	OSM to be conducted in accordance with the Woodside OSM-BIP and, where relevant to the activity, the assessment detailed in ANNEX C: Petroleum Activity OSM Activity Specific Requirement and Verification of OSM-BIP Adequacy.	
		19.6	Monitoring prioritisation will be undertaken in accordance with the process and checklist provided in Table 13-1, informed by the guidance in Section C.2 of the OSPRMA	
		19.7	Mobilisation and implementation of OMPs and SMPs will be undertaken in accordance with the indicative timeframes and sequencing described in Section C.3 of the OSPRMA and Part B of the OSM-BIP	
		19.8	Implementation of OSM will comply with the minimum standards listed in Appendix A of the Joint Industry OSM Framework	
		19.9	Once Scientific Monitoring data reports are drafted they will be peer reviewed by an expert panel for data integrity	
		19.10	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 [now AEP] 2021)	
20	Shoreline Clean-up Assessment Technique (SCAT)	20.1	Mobilisation within 24 hours, in agreement with WA DTMI (for Level 2/3 incidents), deployment of 2 x specialist(s) in SCAT from resource pool for each of the Response Protection Areas (RPAs) with predicted impacts	1, 2, 3B, 3C, 4
		20.2	Reports from OM6: Shoreline Clean-up Assessment will be provided to the IMT daily, detailing the assessed areas to maximise effective utilisation of resources.	1, 3B, 4
		20.3	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
		20.4	Shallow draft vessels will be used to access remote shorelines to minimise the impacts associated with seabed disturbance on approach to the shorelines	
		20.5	Shoreline access routes with the least environmental impact identified will be selected by a specialist in SCAT operations	
		20.6	Vehicular access will be restricted on dunes, turtle nesting beaches and in mangroves	

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5.7 Incident Management System (IMS)

The Incident Management System (IMS) 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 the key response planning processes detailed below (see Section 5.7.1, 5.7.2 and 5.7.3). 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 Petroleum Activity.

As the IMS does not directly remove hydrocarbons spilt into the marine environment there is no direct relationship to the response planning need.

5.7.1 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 IAP and assist the IMT with the execution of that plan. The site-based Incident Commander (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 the appropriateness of techniques to control the incident for the situation at the time.

5.7.2 Operational NEBA process

In the event of a response Woodside will confirm that the response techniques adopted at the time of 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.

5.7.3 Consultation engagement process

Woodside will consult relevant 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 relevant 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.

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5.7.4 Environmental performance based on need

Table 5-13: 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 5.8)
21	Operational SIMA	21.1	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
		21.2	Record the evidence and justification for any deviation from the planned response activities.	
		21.3	Record the information and data from operational and scientific monitoring activities used to inform the SIMA.	
22	Stakeholder engagement	22.1	Prompt and record all notifications (including government notifications) for persons/ organisations in the region are made	
		22.2	In the event of a response, identification of relevant persons/ organisations will be re-assessed throughout the response period.	
		22.3	Undertake communications in accordance with: • Functional Support Team Guideline – Reputation • External Communication and Continuous Disclosure Procedure	
23	Personnel required to support any response	23.1	Action planning is an ongoing process that involves continual review to confirm the appropriateness of techniques to control the incident are appropriate to the situation at the time.	1, 3B
		23.2	A duty roster of trained and competent people will be maintained to maintain minimum manning requirements are met all year round.	3C
		23.3	Immediately activate the CIMT with personnel filling one or more of the following roles: • CIMT Incident Commander • CIMT Deputy Incident Commander • Operations Section Chief • Planning Section Chief • Logistics Section Chief • Documentation Unit Leader • Safety Officer • Environment Unit Leader • Human Resources Officer • Public Information Officer • Situation Unit Leader • Finance Section Chief • Source Control Section Chief	1, 2, 3B, 3C, 4
		23.4	Collect and interpret information from the scene of the incident to determine support requirements to the site-based IMT, develop an IAP and assist with the execution of that plan.	
		23.5	Security and emergency management (S&EM) advisors will be integrated into CIMT to monitor performance of all functional roles.	

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Environmental Performance Outcome		To support the effectiveness of all other control measures and monitor/record the performance levels achieved.		
Control measure		Performance Standard		Measurement Criteria (Section 5.8)
		23.6	Continually communicate the status of the spill and support Woodside to determine the most appropriate response by delivering on the responsibilities of their role.	
		23.7	Follow the Hydrocarbon Spill Australia Regulatory Framework[1], Operational Plans, FSPs, support plans and the IAPs developed.	1, 2, 3A, 4
		23.8	Contribute to Woodside's response in accordance with the aims and objectives set by the Incident Commander.	1, 2, 3B, 3C, 4

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5.8 Measurement criteria for all response techniques

Woodside measures 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 Crisis and Emergency Management Standard. 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 Crisis and Emergency Management (CEM) Standard 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 IAP process formally documents and communicates 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.

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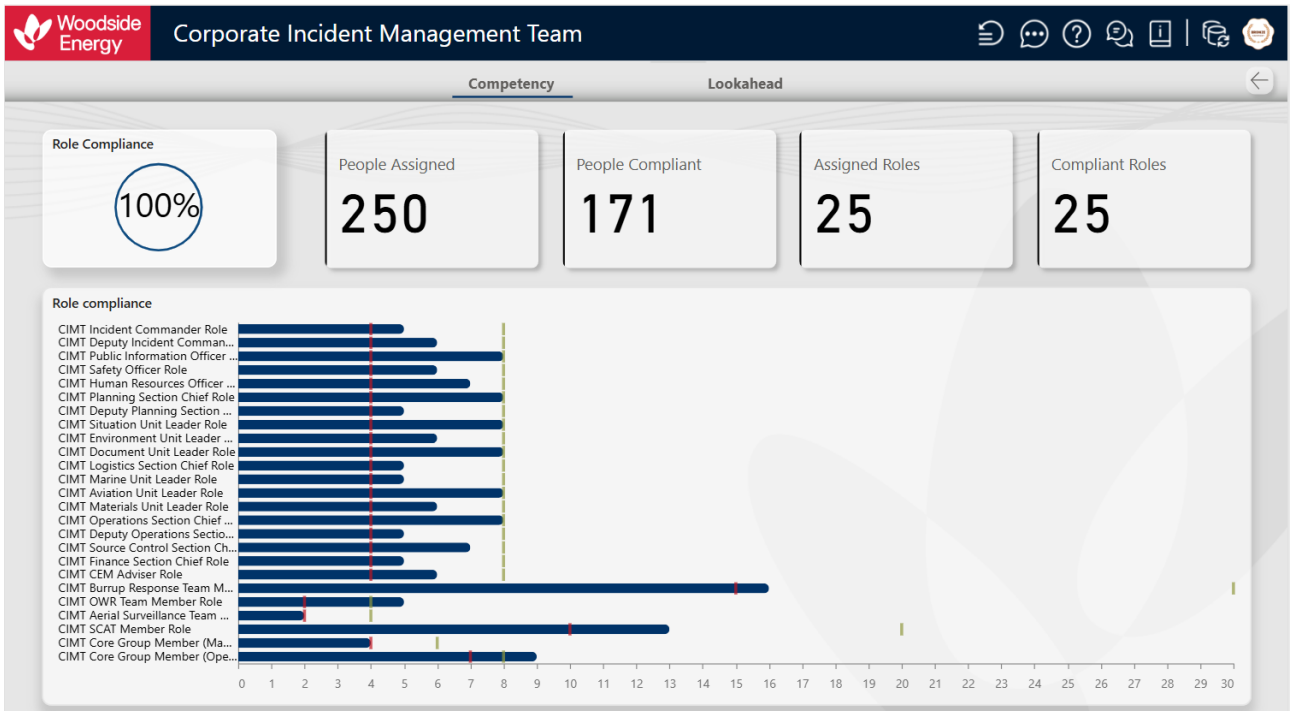


Figure 5-1: Example screenshot of the CEM dashboard

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.

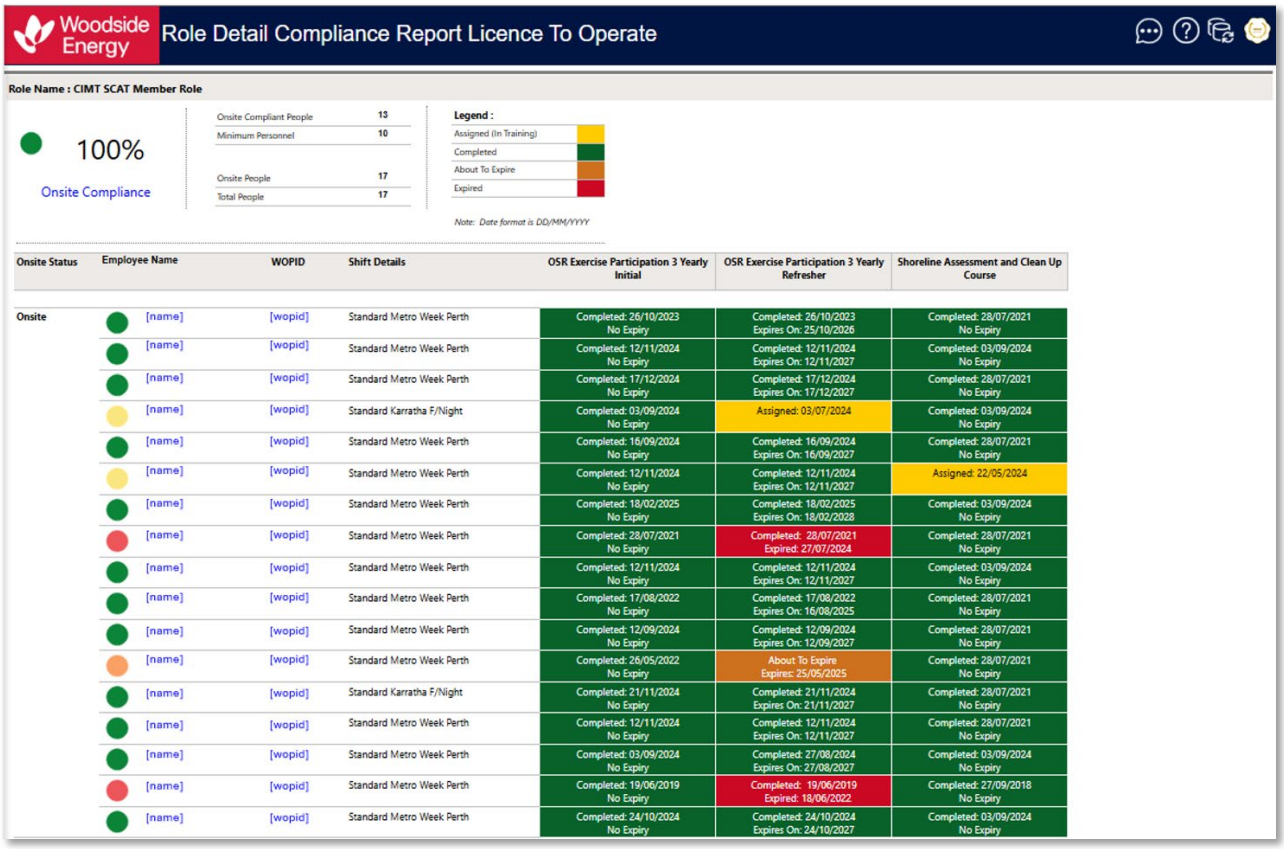


Figure 5-2: Example screenshot for the SCAT role

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Woodside also maintains a pool of trained responders which is composed of but not limited to personnel from the following organisations:

- Woodside internal
- Australian Marine Oil Spill Centre (AMOSC) core group
- AMOSC
- Oil Spill Response Limited (OSRL)
- Marine Spill Response Corporation (MSRC)
- 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:

a. Plans – confirms all plans (including: Hydrocarbon Spill Australia Regulatory Framework[1], first strike plans, operational plans, support plans and tactical response plans) are current and in line with regulatory and internal requirements.

b. Competency (personnel and testing) – confirms the competency dashboard is up to date and there are the minimum numbers across CIMT, Crisis Management Team (CMT) and hydrocarbon spill response roles. The hydrocarbon spill training plan and exercise schedule, including testing of arrangements is also tracked. The Testing of Arrangements (ToA) register tracks the testing of all hydrocarbon spill response arrangements, key contracts and agreements in place with internal and external parties to ensure compliance.

c. Capability (equipment and contracts) – tracks and monitors capability that could be required in a hydrocarbon incident, including but not limited to: integrated fleet6 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 for 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), Hydrocarbon Spill Capability and Competency Standard, and Hydrocarbon Spill Response 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 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

6 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.

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- Maintaining access to identified equipment, personnel and contracts.
- Ensuring compliance and assurance is undertaken in accordance with external and internal requirements.

The Hydrocarbon Spill Response Standard details requirements for appropriate hydrocarbon spill response standards including:

- safeguarding the safety and health of people (responders and communities)
- stopping the source of the spill as quickly as possible
- minimising the environmental and community impact

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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 5.1 with those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are clearly disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.1.1 Monitor and evaluate – Control Measure Options Analysis

6.1.1.1 Alternative Control Measures

Alternative Control Measures considered Alternative, including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
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 is approximately A$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 Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Additional personnel trained to use systems.	Current arrangement provides an environmental benefit in the availability of trained personnel facilitating access to Monitor and evaluate data used to inform all other response techniques. No improvement required.	Woodside considers no improvement can be made, all personnel in technical roles e.g. intelligence unit are trained and competent on the software systems. Personnel are trained and exercised regularly. Use of the software and systems forms part of regular work assignments and projects.	Cost for training in-house staff would be approximately A$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 and additional needs are met from Woodside-owned stocks in King Bay Supply Facility (KBSF) and Exmouth or can be provided by service provider.	Cost for an additional satellite tracking buoy would be A$200 per day or A$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. Woodside has access to a pool of trained, competent observers at strategic locations to allow timely and sustainable response. Additional observers are available through current contracts with AMOSC and OSRL.	Aviation standards and guidelines confirm all aircraft crews are competent for their roles. Woodside 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 maintain training and competency.	Cost for additional trained aerial observers would be A$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 Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
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 A$50,000 for 24-hour access plus an initial A$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

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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 (infrared, ultraviolet, 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 Safety 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 Petroleum Activity.

- Alternative: none selected
- Additional: none selected
- Improved: none selected

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6.2 Source Control via Vessel SOPEP – ALARP Assessment

Alternative, additional and improved options have been assessed against the base capability described in Section 5.2 with those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.2.1 Source Control via Vessel SOPEP – Control Measure Options Analysis

6.2.1.1 Alternative Control Measures

Alternative Control Measures considered Alternative control measures including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
No reasonably practical alternative control measures identified					

6.2.1.2 Additional Control Measures

Additional Control Measures considered Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
No reasonably practical additional control measures identified					

6.2.1.3 Improved Control Measures

Improved Control Measures considered Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
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 Petroleum Activity.

- Alternative: none selected
- Additional: none selected
- Improved: none selected

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6.3 Shoreline Clean-up – ALARP Assessment

Alternative, additional and improved options have been identified and assessed against the base capability described in Section 5.3 with those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are clearly disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.3.1 Existing Capability – Shoreline Clean-up

Woodside's exiting 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 Response planning: Browse to NWS GPGT Surveys – Shoreline Clean-up

Woodside has assessed existing capability against the WCCS and has identified that the range of techniques provide an ongoing approach to shoreline clean-up at identified RPAs. Woodside's capability can cover all required shoreline clean-up operations for the Petroleum Activity.

Modelling predicts shoreline contact at Scott Reef South (including Sandy Islet) within 0.4 days (10 hours). This is the only shoreline receptor predicted to be contacted by hydrocarbons. Maximum shoreline accumulation at Scott Reef South (including Sandy Islet) is predicted to be 80 m^3 in the worst replicate simulation (modelling predicted an average of 2 m^3 over all replicate simulations). Woodside is satisfied that the current capability is managing risks and impacts to ALARP. Relevant Tactical Response Plans available for identified RPAs are included in ANNEX D: Tactical Response Plans.

Sandy Islet is the only emergent feature at Scott Reef South, and is a sandy cay, ~640 m long and 100 m wide at its widest point. Given the small size and risk of ecological impacts from clean-up activities to Sandy Islet and surrounding intertidal reef, the islet could only accommodate one shoreline clean-up team, which would be subject to an operational NEBA at the time of the spill. For the surrounding intertidal reef system, it is likely that natural flushing and re-floating of the oil would occur with the tide. The applicability of shoreline clean-up techniques for any oil found to persistently adhere to the intertidal reef should be assessed during SCAT assessments and undergo operational NEBA.

A response planning need scenario that provides worst-case capability requirements for planning purposes is outlined below.

Woodside has identified several options which could be mobilised to achieve defined response objectives. Evaluation considers the benefit in terms of the time to respond and the scale of response made possible by each option. The evaluation of possible control measures is summarised in Section 6.3.3.

Table 6-1: Response Planning – Shoreline Clean-up

	Shoreline Clean-up (Phase 2)	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Week 2	Week 3	Week 4	Month 2	Month 3	Month 4
	Oil on shoreline (from deterministic modelling) m^3													
	Shoreline accumulation (above 100 g/m^2) – m^3	80	80	0	0	0	0	0	0	0	0	0	0	0
	Oil remaining following response operations – m^3	0	80	26	13	7	3	2	0	0	0	0	0	0
A	**Capability Required (number of operations)**													
A1	Shoreline Clean-up (SCU) operations required (lower)	9	8	3	1	1	0	0	0	0	0	0	0	0
A2	SCU operations required (upper)	0	11	4	2	1	0	0	0	0	0	0	0	0
B	**Capability Available (number of operations)**													
B1	SCU operations available – Stage 2 – Manual (lower)	0	15	15	20	20	20	20	105	105	105	560	560	560
B2	SCU operations available – Stage 2 – Manual (upper)	0	15	15	20	20	20	20	140	140	140	560	560	560
C	**Capability Gap**													
C1	SCU operations gap (lower)	9	-7	-12	-19	-19	-20	-20	-105	-105	-105	-560	-560	-560
C2	SCU operations gap (upper)	0	-4	-11	-18	-19	-20	-20	-140	-140	-140	-560	-560	-560

A1 and A2 – the number of Shoreline Clean-up operations required based on the hydrocarbon volumes ashore above 100 g/m^2

B1 and B2 – the upper and lower number of shoreline clean-up operations available (based on response planning assumptions in Section 5.3),

C1 and C2 – the gap between the upper and lower number of shoreline clean-up operations required in A1 and A2 compared to the operations available in B1 and B2. Green numbers denote where capability exceeds the need

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6.3.3 Shoreline Clean-up – Control measure options analysis

6.3.3.1 Alternative Control Measures

Alternative Control Measures considered Alternative control measures including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
No reasonably practical alternative control measures identified					

6.3.3.2 Additional Control Measures

Additional Control Measures considered Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Additional trained personnel available	The level of training and competency of the response personnel ensures the shoreline clean-up operation is delivered with minimum secondary impact to the environment. Training additional personnel does not provide an increased environmental benefit.	Additional personnel required to sustain an extended response can be sourced through the Woodside *People & Global Capability Surge Labour Requirement Plan*. Additional personnel sourced from contracted OSROs (OSRL/AMOSC) to manage other responders Response personnel are trained and exercised regularly in shoreline response techniques and methods. All personnel involved in a response will receive a full operational/safety brief prior to commencing operations.	Additional Specialist Personnel would cost A$2,000 per person per day.	This option is not adopted as the existing capability meets the need.	No
Additional trained personnel deployed	Additional personnel conducting clean-up activities may be able to complete the clean-up in a shorter timeframe, but large numbers of response personnel on Scott Reef South/Sandy Islet is likely to cause ecological impacts to this sensitive sandy cay. Managing a smaller, targeted response using less intrusive clean-up techniques is expected to achieve an environmental benefit through ensuring the shoreline clean-up response is suitable and scalable for the shoreline substrate and sensitivity type. This will ensure there is no increased impact from the shoreline clean-up through the presence of unnecessary personnel and equipment.	Personnel on site will include members with the appropriate specialties to ensure an efficient shoreline clean-up. Additional personnel are available through existing contracts with oil spill response organisations, labour hire organisations and environmental panel contractors	Additional Specialist Personnel would cost A$2,000 per person per day.	This option is not adopted as the existing capability meets the need.	No

6.3.3.3 Improved Control Measures

Improved Control Measures considered Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Faster response/ mobilisation time	Modelling predicts floating or shoreline accumulation at exposure value at day 0.4 (10 hours) at Scott Reef (CS-01) thus faster response times are not practicable.	Response teams, trained personnel, contracted oil spill response service providers, government agencies and the associated mitigation equipment required to enact an initial clean-up response will be available for mobilisation within 24–48 hours of activation. Additional equipment from existing stockpiles and oil spill response service providers can be on scene within days.	The cost of establishing a local stockpile of new shoreline clean-up equipment closer to the expected hydrocarbon stranding areas is not commensurate with the need.	This option is not adopted as additional shoreline clean-up capability is not considered practicable in the time frames prior to contact. Safety factors have also been considered, including the potential for personnel to be exposed to hydrocarbon gas vapours in the early stage of the response. Given the rapid natural weathering rate of MGO, faster mobilisation is not expected to provide a material net environmental benefit, therefore the current capability is considered to reduce the risk to ALARP.	No

6.3.4 Selected Control Measures

Following review of alternative, additional and improved control measures as outlined above, the following controls were selected for implementation for the Petroleum Activity.

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- Alternative: none selected
- Additional: none selected
- Improved: none selected

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6.4 Oiled Wildlife Response – ALARP Assessment

Alternative, additional and improved options have been identified and assessed against the base capability described in Section 5.4 with those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are clearly disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.4.1 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.

6.4.2 Oiled Wildlife Response - Control Measure Options Analysis

6.4.2.1 Alternative Control Measures

Alternative Control Measures considered Alternative control measures including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
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

6.4.2.2 Additional Control Measures

Additional Control Measures considered Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Additional wildlife treatment systems	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. 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. 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. Current capability meets the needs required and there is no additional environmental benefit in adopting the improvements.	Although hydrocarbon contact above wildlife response exposure value concentrations (≥10 g/m^2) 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. 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. Oiled wildlife response capacity would be addressed for open Commonwealth waters through the AMOSC arrangements, as informed by monitor and evaluate. The cost and organisational complexity of this approach is moderate, and the overall delivery effectiveness is high.	Additional wildlife response resources could total A$1,700 per operational site per day.	This option is not adopted as the existing capability meets the need.	No
Additional trained wildlife responders	Numbers of oiled wildlife are expected to be low in the remote offshore setting of the oiled wildlife response, given the distance from known aggregation areas. The potential environmental benefit of training additional personnel is expected to be low.	Current numbers meet the needs required and additional personnel are available through existing contracts with oil spill response organisations and environmental panel contractors. Additional equipment and facilities would be required to support ongoing response, depending on the scale of the event and the impact to wildlife and maybe sourced via existing contracts with OSROs. Materials for holding facilities, portable pools, enclosures and rehabilitation areas would be sourced as required.	Additional wildlife response personnel cost A$2,000 per person per day	This option is not adopted as the existing capability meets the need.	No

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6.4.2.3 Improved Control Measures

Improved Control Measures considered Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
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

6.4.3 Selected control measures

Following review of alternative, additional and improved control measures, the following controls were selected for implementation for the Petroleum Activity.

- Alternative: none selected
- Additional: none selected
- Improved: none selected

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6.5 Waste Management – ALARP Assessment

Alternative, additional and improved options have been identified and assessed against the base capability described in Section 5.5 with those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are clearly disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.5.1 Existing Capability – Waste Management

Woodside's exiting 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.

6.5.2 Waste Management - Control Measure Options Analysis

6.5.2.1 Alternative Control Measures

Alternative Control Measures considered Alternative control measures including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
No reasonably practical alternative control measures identified					

6.5.2.2 Additional Control Measures

Additional Control Measures considered Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
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 Petroleum Activity.	Cost for increased waste disposal capability would be ~A$1,300 per m^3. Cost for increased onshore temporary waste storage capability would be ~A$40 per unit per day.	This option is not adopted as the existing capability meets the need.	No

6.5.2.3 Improved Control Measures

Improved Control Measures considered Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
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 and transport will allow continuous response operations to occur. 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.	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

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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 Petroleum Activity.

- Alternative: none selected
- Additional: none selected
- Improved: none selected

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6.6 Operational and Scientific Monitoring – ALARP Assessment

Alternative, additional and improved options have been identified and assessed against the base capability described in Section 5.6 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.

6.6.1 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 limitation that are beyond Woodside's direct control.

6.6.2 Operational and Scientific Monitoring – Control Measure Options Analysis

6.6.2.1 Alternative Control Measures

Alternative Control Measures considered Alternative control measures including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
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 are equipped with 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 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

6.6.2.2 Additional control measures

Additional Control Measures considered Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
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 initial 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
Contract additional OSM Service Providers to increase availability of monitoring personnel in the first 2 weeks of the spill	The availability of additional monitoring personnel could theoretically increase the number of receptors and locations able to be monitored, however, the ability to deploy personnel would be subject to a range of feasibility considerations.	This option has been considered and evaluated; however, it has been discounted on the basis that deploying a significantly larger number of monitoring teams concurrently with response operations would introduce additional safety, environmental, and operational risks. The current resource assessment within Section C.4 indicates that up to 16 monitoring teams may be required during the initial 2 weeks of the response. Expanding this effort further by engaging additional contracted monitoring teams would likely result in increased simultaneous operations (SIMOPs), elevating the potential for vessel interactions, collision risks, anchoring impacts, and waste discharges, thereby increasing the overall risk profile. To ensure risk remains ALARP, a staged and scalable approach to resourcing has been adopted. Should additional monitoring capacity be required from week 3 onwards, this will be identified early	Cost to contract an additional OSM Service Provider.	The option to contract an additional OSM Service Provider to increase the number of contracted monitoring teams during the initial stages of the spill response has been assessed and found not to be reasonably practicable due to the elevated safety and environmental risks associated with SIMOPs, including vessel collisions, anchoring impacts, and waste discharges. These risks outweigh the marginal benefit of increased early-stage monitoring coverage, particularly given the scale of the existing response and monitoring deployment already planned.	No

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		through ongoing review of monitor and evaluate activities and existing monitoring efforts. Woodside will activate additional resourcing via its existing contract with the OSM Services Provider, thereby ensuring a streamlined and controlled expansion of effort. By this stage of the response, operational response activities are expected to have stabilised, reducing the likelihood and severity of SIMOPs-related risks. In addition, efficiencies may be gained by reallocating existing monitoring teams to other priority receptors where monitoring is still required, particularly in cases where termination criteria have been met at initial locations. This dynamic resourcing approach ensures that additional personnel are only deployed when necessary, thereby supporting both environmental and safety performance outcomes and maintaining ALARP principles throughout the monitoring program.			
Purchase initial water quality / hydrocarbon sampling kits for pre-positioning on nearby support vessels and develop technical procedure for sample collection	The availability of initial 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 initial water quality sampling.	Implementing this additional control measure will involve time and effort to source and supply initial 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 initial 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 Marine Fauna Assessment and Oiled Wildlife Response.	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
Conduct periodical review of existing baseline data sources across receptors predicted to be contacted within 7 days at the low exposure values and a probability ≥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 ≥ 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.	Yes

6.6.2.3 Improved Control Measures considered

Improved Control Measures considered Improved control measures, including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
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.	Yes

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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.	Yes

6.6.3 Selected Control Measures

Following review of alternative, additional and improved control measures as outlined above, the following controls were selected for implementation for the Petroleum Activity:

- Alternative: none selected
- Additional:
  - purchase 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 exposure values and a probability ³ 10%.
- Improved:
  - adopt 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.

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6.6.4 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 operational and scientific monitoring's main objectives can be met, with the adoption of three additional and one improved control measures to provide further benefit.	
Acceptability Summary	The control measures selected for implementation manage the potential impacts and risks to ALARP. In the event of a hydrocarbon spill for the Petroleum Activity, the control measures selected, meet or exceed the requirements of Woodside Management System and industry best-practice. Operational and scientific monitoring control and activities are compliant with relevant environmental legislation and regulations, including the EPBC Act. Throughout the Petroleum Activity, relevant Australian standards and codes of practice will be followed to evaluate the impacts from a loss of containment event. Stakeholder consultation undertaken for the Petroleum Activity did not receive feedback regarding concerns for Scientific Monitoring activities in response to a hydrocarbon spill. The level of impact and risk to the environment has been considered with regards to the principles of Ecologically Sustainable Development; and risks and impacts from a range of identified scenarios were assessed in detail. The control measures described consider the conservation of biological and ecological diversity, through both the selection of control measures and the management of their performance. The control measures have been developed to account for credible case scenarios, and uncertainty has not been used as a reason for postponing control measures.	
On the basis from the ALARP and acceptability summary as presented above and in Section [xx] of the 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.		

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7 ENVIRONMENTAL RISK ASSESSMENT OF SELECTED RESPONSE TECHNIQUES

The implementation of response techniques may modify the impacts and risks identified in the EP and response activities can introduce additional impacts and risks from response operations themselves. Therefore, it is necessary to complete an assessment to ensure these impacts and risks have been considered and specific measures are put in place to continually review and manage these further impacts and risks to ALARP and Acceptable levels. A simplified assessment process has been used to complete this task which covers the identification, analysis, evaluation and treatment of impacts and risks introduced by responding to the event.

7.1 Identification of impacts and risks from implementing response techniques

Each of the control measures can modify the impacts and risks identified in the EP. These impacts and risks have been previously assessed within the scope of the EP. Refer to the EP for details regarding how these risks are being managed. They are not discussed further in this document.

- Atmospheric emissions
- Routine and non-routine discharges
- Physical presence, proximity to other vessels (shipping and fisheries)
- Routine acoustic emissions vessels
- Lighting for night work/navigational safety
- Invasive marine species
- Collision with marine fauna
- Disturbance to Seabed

Additional impacts and risks associated with the control measures not included within the scope of the EP include

- Vessel operations and anchoring
- Presence of personnel on the shoreline
- Human presence (manual cleaning)
- Vegetation cutting
- Additional stress or injury caused to wildlife
- Secondary contamination from the management of waste

7.2 Analysis of impacts and risks from implementing response techniques

The table below compares the adopted control measures for this activity against the environmental values that can be affected when they are implemented.

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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		✓	✓	✓	✓	✓	✓
Shoreline clean-up	✓	✓	✓	✓	✓	✓	✓
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). 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.

Presence of personnel on the shoreline

Presence of personnel on the shoreline during shoreline operations could potentially result in disturbance to wildlife and habitats. During the implementation of response techniques, it is possible that personnel may have minimal, localised impacts on habitats, wildlife and coastlines. The impacts associated with human presence on shorelines during shoreline surveys may include:

- Damage to vegetation/habitat to gain access to areas of shoreline oiling
- Damage or disturbance to wildlife during shoreline surveys
- Removal of surface layers of intertidal sediments (potential habitat depletion)
- Excessive removal of substrate causing erosion and instability of localised areas of the shoreline.

Human presence

Human presence for manual clean-up operations may lead to the compaction of sediments and damage to the existing environment especially in sensitive locations such as turtle nesting beaches. However, any impacts are expected to be localised with full recovery expected.

Waste generation

Implementing the selected response techniques will result in the generation of the following waste streams that will require management and disposal:

- Liquids (recovered oil/water mixture), recovered from shoreline clean-up operations
- Semi-solids/solids (oily solids), collected during shoreline clean-up operations
- Debris (e.g. seaweed, sand, woods, plastics), collected during shoreline clean-up operations and oiled wildlife response.

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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 is 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 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 (Performance Standard [PS] 8.1, PS 20.3).
- Shallow draft vessels will be used to access remote shorelines to minimise the impacts associated with seabed disturbance on approach to the shorelines (PS 8.2, PS 20.4).

Presence of personnel on the shoreline

- Oversight by trained personnel who are aware of the risks (PS 8.6).
- Trained unit leader's brief personnel of the risks prior to operations (PS 8.7).

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 8.3, PS 20.5)
- Vehicular access will be restricted on dunes, turtle nesting beaches and in mangroves. (PS 8.4, PS 20.6)

Waste generation

- All shoreline clean-up sites will be zoned and marked before clean-up operations commence to prevent secondary contamination and minimise the mixing of clean and oiled sediment and shoreline substrates. (PS 6.4)
- Removal of vegetation will be limited to moderately or heavily oiled vegetation (PS 8.5)
- Teams will segregate liquid and solid wastes at the earliest opportunity (PS 14.1).

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Additional stress or injury caused to wildlife

- Oiled wildlife operations (including hazing) would be implemented with advice from the DBCA Oiled Wildlife Advisor and in accordance with the processes and methodologies described in the WA OWRP and the relevant regional plan (PS 12.1).

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8 ALARP CONCLUSION

An analysis of alternative, additional and improved control measures has been undertaken to determine their reasonableness and practicability. The tables in Section 6 document the considerations made in this evaluation. Where the costs of an alternative, additional, or improved control measure have been determined to be clearly disproportionate to the environmental benefit gained from its adoption it has been rejected. Where this is not considered to be the case the control measure has been adopted.

The risks from a hydrocarbon spill have been reduced to ALARP because:

- Woodside has a significant hydrocarbon spill response capability to respond to the WCCS through the control measures identified.
- New and modified impacts and risks associated with implementing response techniques have been considered and will not increase the risks associated with the activity.
- A consideration of alternative, additional, and improved control measures identified any other control measures that delivered proportionate environmental benefit compared to the cost of adoption for this activity ensuring that:
  - Known, reasonably practicable control measures have been adopted.
  - No additional, reasonably practicable alternative and/or improved control measures would provide further environmental benefit.
  - No reasonably practical additional, alternative, and/or improved control measure exists.
- A structured process for considering alternative, additional, and improved control measures was completed for each control measure.
- The evaluation was undertaken based on the outputs of the WCCS so that the capability in place is sufficient for all other scenario from this activity.
- The likelihood of the WCCS spill has been ignored in evaluating what was reasonably practicable.

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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

Term	Description / Definition
~	Approximately
<, ≤	Less than, less than or equal to
>, ≥	Greater then, greater than or equal to
°C	Degrees Celsius
AEP	Australian Energy Producers (formerly Australian Petroleum Production and Exploration Association [APPEA]; from 13 September 2023)
ALARP	As low as reasonably practicable; Demonstration through reasoned and supported arguments that there are no other practicable options that could reasonably be adopted to reduce risks further.
AMOP	Arctic and Marine Oil Spill Program
AMOSC	Australian Marine Oil Spill Centre
AMSA	Australian Maritime Safety Authority
APPEA	Australian Petroleum Production & Exploration Association (now Australian Energy Producers (AEP); from 13 September 2023)
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.
BAOAC	Bonn Agreement Oil Appearance Code
BC Act	Western Australian Biodiversity Conservation Act 2016
BIA	Biologically Important Area
BIP	Bridging Implementation Plan
BP	Boiling point
CEM	Crisis and Emergency Management
CERCLA	United States Comprehensive Environmental Response, Compensation, and Liability Act
CIMT	Corporate Incident Management Team (Level 2 incidents)
CMT	Crisis Management Team (Level 3 incidents)
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 Petroleum Activity.
COP	Common Operating Picture
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 Petroleum Activity.
CS	Credible scenario
cSt	Centistokes
DBCA	Western Australia Department of Biodiversity, Conservation and Attractions
DTMI	Western Australia Department of Transport and Major Infrastructure
DWH	Deepwater Horizon

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Term	Description / Definition
EMBA	Environment that May Be Affected. The summary of quantitative modelling where the marine environment could be exposed to hydrocarbons levels exceeding hydrocarbon exposure value concentrations.
EMSA	European Maritime Safety Agency
Environment Regulations	Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023
EP	Environment Plan
EPBC Act	Commonwealth Environment Protection and Biodiversity Conservation Act 1999
Exposure value	Hydrocarbon concentrations applied to the risk assessment to evaluate hydrocarbon spills
FSP	First Strike Plan
ft	Feet (non-metric distance measurement)
GPGT	Geophysical and geotechnical
HSE	Health, safety and environment
HSP	Hydrocarbon Spill Preparedness
HVLP	High volume low pressure
IAP	Incident Action Plan
IC	Incident Commander
IMO	International Maritime Organization
IMS	Incident Management System
IMT	Incident Management Team (Level 1 incidents)
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.
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
KEF	Key Ecological Feature
KGP	Karratha Gas Plant
km	Kilometre
m	Metre
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.
MGO	Marine Gas Oil
MEPC	Marine Environment Protection Committee (part of the IMO)
MGO	Marine Gas Oil
mm	Millimetre
MSA	Master Services Agreement
MSP	Monitoring Service Provider
MSRC	Marine Spill Response Corporation
NEBA	Net Environmental Benefit Analysis
NOAA	National Oceanic and Atmospheric Administration

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Term	Description / Definition
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority (Australia)
NR	Nature Reserve
NRDA	Natural Resource Damage Assessment
OILMAP	Oil Spill Model and Response System
OM	Operational Monitoring
OMP	Operational Monitoring Plan
OPEP	Oil Pollution Emergency Plan
OSCA	Oil Spill Control Agent
OSM	Operational and Scientific Monitoring
OSPRMA	Oil Spill Preparedness and Response Mitigation Assessment
OSRL	Oil Spill Response Limited
OSTM	Oil Spill Trajectory Modelling
OWR	Oiled Wildlife Response
OWRP	Oiled Wildlife Response Plan
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.
PPA	Priority Protection Area
ppb	Parts per billion
Preparedness	Measures taken before an incident in order to improve the effectiveness of a response
PS	Performance Standard
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])
Receptor areas	Geographically referenced areas such as bays, islands, coastlines and/or protected area (World Heritage Area [WHA], Commonwealth or State marine reserve or park) containing one or more receptor type.
Receptors at risk	Physical, biological and social resources identified as at risk from hydrocarbon contact using oil spill modelling predictions.
Regulator	NOPSEMA are the Environment Regulator under the Environment Regulations.
Reliability	The probability that at any point in time a control measure will operate correctly for a further specified length of time.
Response technique	The key priorities and objectives to be achieved by the response plan Measures taken in response to an event to reduce or prevent adverse consequences.
RPA	Response Protection Area
S&EM	Security and Emergency Management
SCAT	Shoreline Clean-up Assessment Techniques
SCU	Shoreline clean-up

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Term	Description / Definition
SHP-MEE	State Hazard Plan – Maritime Environmental Emergencies
SIMA	Spill Impact Mitigation and Assessment
SIMAP	Integrated Oil Spill Impact Model System
SIMOPS	Simultaneous operations
SMP	Scientific Monitoring Plan
SOPEP	Shipboard Oil Pollution Emergency Plan
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.
ToA	Testing of Arrangements
TRP	Tactical Response Plan
UAS	Unmanned Aerial System
UAV	Unmanned Aerial Vehicle
UK	United Kingdom
VOC	Volatile Organic Compound
WA	Western Australia
WAOWRP	WA Oiled Wildlife Response Plan
WCCS	Worst Case Credible Scenario
WHA	World Heritage Area
Woodside	Woodside Energy Limited

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ANNEX A: NET ENVIRONMENTAL BENEFIT ANALYSIS DETAILED OUTCOMES

A NEBA has been conducted to assess the net environmental benefit of different response techniques to selected receptors in the event of an MGO spill from the Petroleum Activity for CS-01. The complete list of potential receptor locations within the EMBA for the Petroleum Activity is included in Section 6.9 of the EP.

The locations used for the NEBA were limited to the identified RPAs of the Petroleum Activity identified from modelling (see Section 3 for outline of selection). These include receptors which have potential for the following:

- Surface contact (>50 g/m^2) – no contact predicted at any RPA at any time
- Surface contact (>10 g/m^2 for potential oiled wildlife response)
- Shoreline accumulation (>100 g/m^2)

The detailed NEBA assessment outcomes are shown below. The Petroleum Activity preoperational NEBAs contains the full assessments.

Table A-1: NEBA assessment technique recommendations for MGO vessel collision (CS-01)

Receptor	Monitor and evaluate	Containment and recovery	Dispersant application: sub-sea	Dispersant application: >20 m water depth and >10 km from shore/reefs	Shoreline protection	Shoreline clean-up (manual)	Shoreline clean-up (mechanical)	Shoreline clean-up (chemical)	Oiled wildlife response	In situ burning	Mechanical dispersion	Source control (via vessel SOPEP)
Scott Reef North*	Yes	No	N/A	No	N/A	N/A	N/A	N/A	Yes	No	No	Yes
Scott Reef South	Yes	No	N/A	No	No	Yes	No	No	Yes	No	No	Yes
Sandy Islet	Yes	No	N/A	No	No	Yes	No	No	Yes	No	No	Yes
Seringapatam Reef*	Yes	No	N/A	No	N/A	N/A	N/A	N/A	Yes	No	No	Yes

** Oil spill modelling predicted this receptor only to be contacted by floating hydrocarbons >10 g/m^2 for consideration of oiled wildlife response*

Overall assessment

Sensitive receptor (sites identified in EP)	Monitor and evaluate	Containment and recovery	Dispersant application: sub-sea	Dispersant application: >20 m water depth and >10 km from shore/reefs	Shoreline protection	Shoreline clean-up (manual)	Shoreline clean-up (mechanical)	Shoreline clean-up (chemical)	Oiled wildlife response	In situ burning	Mechanical dispersion	Source control (via vessel SOPEP)
Is this response practicable?	Yes	No	N/A	No	No	Potentially	No	No	Yes	No	No	Yes
NEBA identifies response potentially of net environmental benefit?	Yes	No	N/A	No	No	Potentially	No	No	Yes	No	No	Yes

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NEBA Impact Ranking Classification Guidance

To reduce variability between assessments, the following ranking descriptions have been devised to guide the workshop process:

			Degree of impact7	Potential duration of impact	Equivalent Woodside Corporate Risk Matrix Consequence Level
Positive	3P	Major	Likely to prevent: • behavioural impact to biological receptors • behavioural impact to socio-economic receptors e.g. changes to day-today business operations, public opinion/behaviours (e.g. avoidance of amenities such as beaches) or regulatory designations.	Decrease in duration of impact by > 5 years	N/A
	2P	Moderate	Likely to prevent: • significant impact to a single phase of reproductive cycle of biological receptors • detectable financial impact, either directly (e.g. loss of income) or indirectly (e.g. via public perception), for socio-economic receptors.	Decrease in duration of impact by 1–5 years	N/A
	1P	Minor	Likely to prevent impacts on: • significant proportion of population or breeding stages of biological receptors • socio-economic receptors such as: - significant impact to the sensitivity of protective designation; or - significant and long-term impact to business/industry.	Decrease in duration of impact by several seasons (< 1 year)	N/A
	0	Non-mitigated spill impact	No detectable difference to unmitigated spill scenario.		
Negative	1N	Minor	Likely to result in: • behavioural impact to biological receptors • behavioural impact to socio-economic receptors e.g. changes to day-to-day business operations, public opinion/behaviours (e.g. avoidance of amenities such as beaches), or regulatory designations.	Increase in duration of impact by several seasons (< 1 year)	Increase in risk by one sub-category, without changing category (e.g. Minor (E) to Minor (D))
	2N	Moderate	Likely to result in: • significant impact to a single phase of reproductive cycle for biological receptors; or • detectable financial impact, either directly (e.g. loss of income) or indirectly (e.g. via public perception), for socio-economic receptors. This level of negative impact is recoverable and unlikely to result in closure of business/industry in the region.	Increase in duration of impact by 1–5 years	Increase in risk by one category (e.g. Minor (D) to Moderate (C or B))
	3N	Major	Likely to result in impacts on: • significant proportion of population or breeding stages of biological receptors • socio-economic receptors resulting in either: - significant impact to the sensitivity of protective designation; or - significant and long-term impact to business/industry.	Increase in duration of impact by > 5 years or unrecoverable	Increase in risk by two categories (e.g. Minor (E) to Major (A))

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7 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

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ANNEX B: MONITOR AND EVALUATE ACTIVATION AND TERMINATION CRITERIA

Table B-1: Monitor and evaluate objectives, triggers and termination criteria

Operational Monitoring Operational Plan	Objectives	Activation triggers	Termination criteria
Predictive Modelling of Hydrocarbons to Assess Resources at Risk	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. The objectives of predictive modelling are to: • Provide forecasting of the movement and weathering of spilled hydrocarbons • Identify resources that are potentially at risk of contamination • Provide simulations showing the outcome of alternative response options (booming patterns etc.) to inform on-going Net Environmental Benefit Analysis (NEBA) and continually assess the efficacy of available response options in order to reduce risks to ALARP	• Predictive modelling will be triggered immediately following a level 2/3 hydrocarbon spill.	• The criteria for the termination of predictive modelling are: • The hydrocarbon discharge has ceased and no further surface oil is visible • Response activities have ceased • Hydrocarbon spill modelling (as verified by surveillance observations) predicts no additional natural resources will be impacted
Surveillance and reconnaissance to detect hydrocarbons and resources at risk	Surveillance and reconnaissance aims to provide regular, on-going hydrocarbon spill surveillance throughout a broad region, in the event of a spill. The objectives of surveillance and reconnaissance are: • Verify spill modelling results and recalibrate spill trajectory models. • Understand the behaviour, weathering and fate of surface hydrocarbons. • Identify environmental receptors and locations at risk or contaminated by hydrocarbons. • Inform ongoing Net Environmental Benefit Analysis (NEBA) and continually assess the efficacy of available response options in order to reduce risks to ALARP. • To aid in the subsequent assessment of the short- to long-term impacts and/or recovery of natural resources (assessed in SMPs) by ensuring that the visible cause and effect relationships between the hydrocarbon spill and its impacts to natural resources have been observed and recorded during the operational phase.	• Surveillance and reconnaissance will be triggered immediately following a level 2/3 hydrocarbon spill.	• The termination triggers for the Surveillance and reconnaissance are: • 72 hours has elapsed since the last confirmed observation of surface hydrocarbons. • Latest hydrocarbon spill modelling results do not predict surface exposures at visible levels.

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Operational Monitoring Operational Plan	Objectives	Activation triggers	Termination criteria
Pre-emptive assessment of sensitive receptors at risk	• 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. • 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. • 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. • Pre-emptive shorelines assessment would be undertaken in liaison with WA DTMI as the control agency once the oil is in State Waters (if a Level 2/3 incident).	• Triggers for commencing pre-emptive shorelines assessment include: • Contact of a sensitive habitat or shoreline is predicted by predictive modelling and surveillance. • 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.	• The criteria for the termination of pre-emptive shorelines assessment at any given location are: • Locations predicted to be contacted by hydrocarbons have been contacted. • The location has not been contacted by hydrocarbons and is no longer predicted to be contacted by hydrocarbons (resources should be reallocated as appropriate).

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ANNEX C: PETROLEUM ACTIVITY OSM ACTIVITY SPECIFIC REQUIREMENT AND VERIFICATION OF OSM-BIP ADEQUACY

The Woodside OSM-BIP comprehensively presents important information for OSM assessment and implementation, including the process for assessing OSM requirements for each activity. This Annex provides the activity-specific information required for the Browse Geophysical and Geotechnical Surveys – Commonwealth (hereafter referred to as the Petroleum Activity) OSM Assessment, including:

- OSM Planning Area
- Monitoring priorities
- Mobilisation and implementation timeframes
- Resourcing requirements and capability assessment.

C.1 Determine if the activity OSM Planning Area fits within the Combined OSM Planning Area

The OSM Planning Area for the Petroleum Activity credible spill scenarios (as shown in Figure C - 1) fits within the Combined OSM Planning Area (Figure 2-1 in the OSM-BIP).

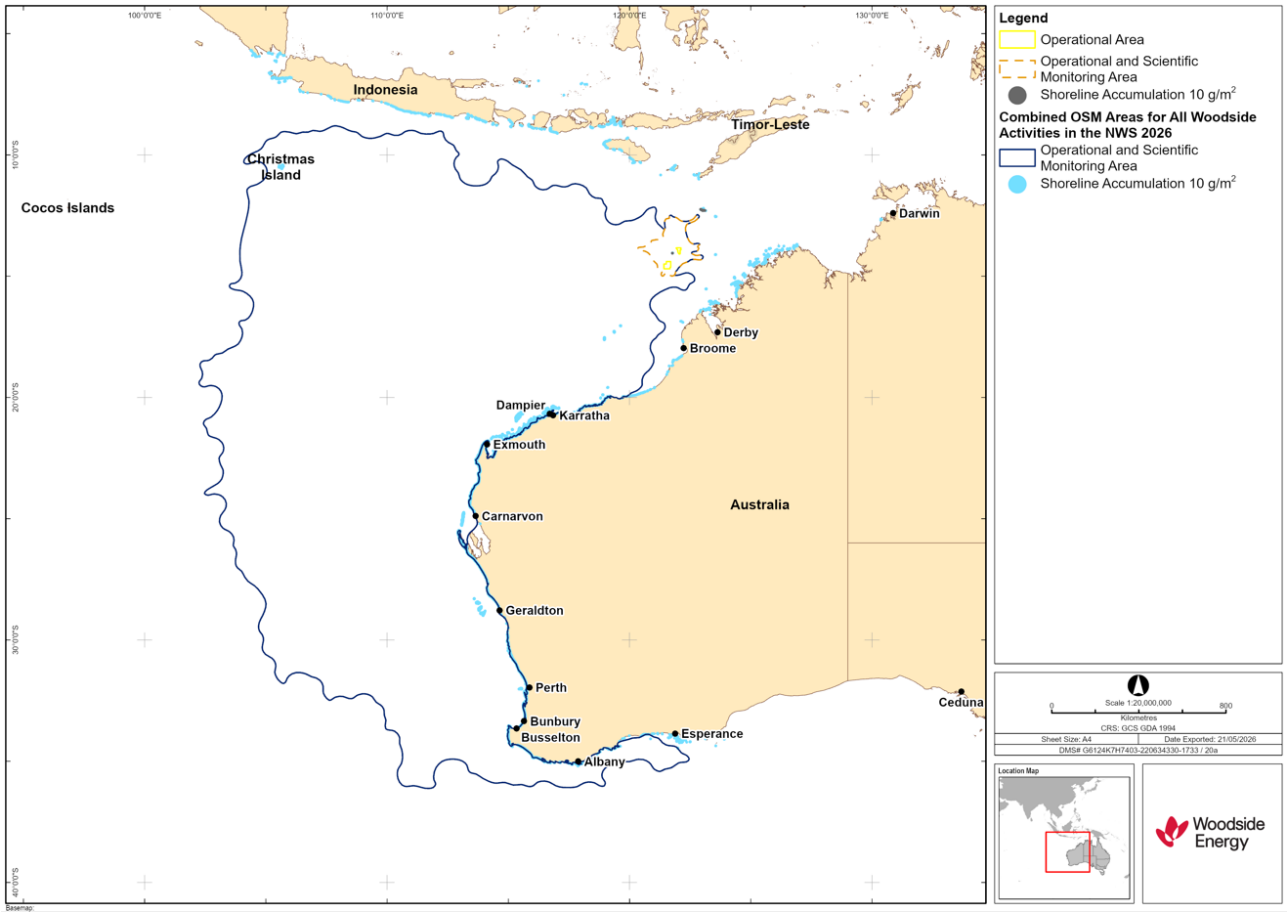


Figure C - 1: Petroleum Activity OSM Planning Area based on the area potentially contacted by the low (below ecological impact) hydrocarbon exposure values in the event of the worst-case credible spill scenarios (CS-01 and CS-02)

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C.2 Determine activity-specific monitoring priorities

The monitoring priorities for the Petroleum Activity have been identified through application of the tiered prioritisation hierarchy described in Section 2.2 of the Woodside OSM-BIP to the stochastic oil spill modelling results for the two WCCS spill scenarios: CS-01 – Vessel collision of 200 m^3 of MGO at Operational Area A; and CS-02 – Vessel collision of 200 m^3 of MGO at Operational Area B.

Floating oil and shoreline accumulation stochastic outputs at the three tier exposure values for both scenarios are presented in Table 2-5. Entrained and dissolved outputs are presented in Table C - 1 (CS-01) and Table C - 2 (CS-02). As the credible spill is a 200 m³ MGO vessel release, monitoring priorities are concentrated at the Scott Reef complex; no receptor beyond it reaches a monitoring tier.

Initial monitoring priorities (within the first 14 days of a spill)

Each receptor identified in Table C - 1 and Table C - 2 has been assigned a base monitoring tier by applying the base tier criteria in Table 2-2 of the OSM-BIP to the highest exposure value predicted across the floating, shoreline, entrained and dissolved hydrocarbon phases within 14 days at a probability ≥10%. The base tier has then been refined, where warranted, by applying the additional monitoring prioritisation criteria in Table 2-3 of the OSM-BIP (Section 2.2.3): receptor sensitivity (the Western Australian DTMI ranking), vulnerability to the predicted exposure pathway, and baseline data adequacy, following the decision logic in Figure 2-2 of the OSM-BIP. The resultant base tier, the additional criteria applied and the refined initial monitoring priority for each receptor are presented in Table C - 4 (CS-01) and Table C - 5 (CS-02). The geographic extent of the Tier 1, Tier 2 and Tier 3 stochastic exposure areas for CS-01 within the 14-day initial prioritisation window is illustrated in Figure C - 2.

Broad-scale ecological features that intersect a receptor (including Key Ecological Features (KEFs), Biologically Important Areas (BIAs) and Australian Marine Parks (AMPs)) are embedded in that receptor's Western Australian DTMI sensitivity ranking and are therefore considered in the prioritisation without being listed separately as monitoring priorities. Where such features, or transient and protected species, extend beyond the named-receptor footprint, they are captured in the monitoring units described in Section C.4 (Table C - 7).

For CS-01 (Operational Area A), two receptors are classified as Tier 1 initial monitoring priorities and three as Tier 3 priorities (Table C - 4); no receptor reaches Tier 2. The Tier 1 receptors are Scott Reef North and Scott Reef South, driven by predicted entrained hydrocarbon exposure at ≥1,000 ppb within 14 days (15% and 10.5% probability of contact respectively); floating oil exposure at ≥50 g/m² is also predicted at Scott Reef North (100% probability), reflecting its proximity to the release location. Each receptor's refined initial monitoring priority equals its base tier; no promotion was warranted under the additional monitoring prioritisation criteria, as the Tier 3 receptors are contacted by entrained hydrocarbons alone.

For CS-02 (Operational Area B), no receptors are classified as Tier 1 or Tier 2 initial monitoring priorities; all five contacted receptors - Scott Reef North, Scott Reef South, Scott Reef Nature Reserve, Sandy Islet and Seringapatam Reef - are classified as Tier 3 (Table C - 5). Each is contacted within 14 days by entrained hydrocarbons at ≥10 ppb only. No promotion was warranted under the additional monitoring prioritisation criteria. The absence of higher-tier receptors for CS-02 relative to CS-01 reflects the lower predicted exposure at the Scott Reef complex from the Operational Area B release location.

The tier rankings presented in Table C - 4 and Table C - 5 are pre-spill, modelling-derived classifications. Because these priorities are derived from stochastic modelling, which combines the full range of possible spill trajectories across many simulation runs, not all of the listed receptors may be contacted by a single spill event. At the time of a spill, Woodside, its OSM Services Provider/s and key stakeholders will confirm the initial tier ranking for each receptor and adapt it through continual re-evaluation as the spill evolves and actual exposure data becomes available (refer to Section 13 and Section 18.1 of the OSM-BIP).

Receptors identified as RPAs in Section 3 of this OSPRMA (Table 3-1) are included in Table C - 4 and Table C - 5 only where they are contacted at a probability ≥10% within 14 days. RPA status is recorded in the 'Additional monitoring prioritisation criteria' column of these tables for completeness only; it is not an additional monitoring prioritisation criterion and does not promote or demote a receptor's tier. Where shoreline contact is predicted only beyond the 14-day window, phased operational monitoring mobilisation is aligned with the predicted arrival of the spill (Section 2.2.5 of the OSM-BIP).

The availability and adequacy of baseline data for the receptors identified as initial monitoring priorities has been assessed against the parameters and methods of the relevant Joint Industry Scientific Monitoring Plans (SMPs). This activity-specific baseline data assessment is presented in Table C - 3. Consistent with Section

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2.2.3 of the OSM-BIP, the baseline data assessment was considered as one of the additional monitoring prioritisation criteria. Where baseline data for a receptor and its relevant monitoring program(s) is limited or absent, this supports the prioritisation of that receptor for scientific monitoring and informs the design of any reactive (post-spill, pre-contact) baseline data collection at the time of a spill.

Tier 1 or Tier 2 monitoring would be initiated if situational awareness data and/or surveillance during an actual spill identifies exposure at a receptor, as per the dynamic re-evaluation process in Sections 13 and 18 of the OSM-BIP. Therefore, Woodside and its OSM Services Provider/s will still activate and mobilise monitoring resources to Tier 3 receptors in the absence of any higher ranked receptors.

The inclusion of entrained hydrocarbons at concentrations at or above the 10 ppb exposure value denotes exposure but does not necessarily imply toxicity; for entrained whole-oil droplets, the toxic fraction is small as many hydrocarbon constituents remain sequestered and not bioavailable (French-McCay, 2026). Where a receptor is contacted only by the lowest concentration of entrained hydrocarbons and not by any other hydrocarbon phase, it has been assigned to Tier 3, with the rationale recorded in Table C - 4 and Table C - 5.

Receptors contacted beyond the 14-day initial prioritisation window

A beyond 14-day receptor assessment is not undertaken on an activity-specific basis for the Petroleum Activity (as per OSM-BIP Section 2.2.4). Receptors observed or predicted to be contacted beyond the 14-day initial prioritisation window during a spill are added to the monitoring scope through the post-spill continual re-evaluation process described in OSM-BIP Section 18 (Use of Data in Response Decision-making). Tier assignment at the time of predicted or observed beyond-14-day contact is undertaken by the Woodside Environment Unit Leader (or delegate) in consultation with the OSM Services Provider and key stakeholders using the same tier framework in OSM-BIP Section 2.2.

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Table C - 1: Petroleum Activity credible spill scenario (CS-01) – entrained and dissolved stochastic modelling results for receptors with a probability of contact ≥10% and <14 days

Receptor	Probability (%) entrained oil at ≥10 ppb	Min. arrival time entrained oil ≥10 ppb (days)	Probability (%) entrained oil at ≥1,000 ppb	Min. arrival time entrained oil ≥1,000 ppb (days)	Probability (%) dissolved oil at ≥10 ppb	Min. arrival time dissolved oil ≥10 ppb (days)	Probability (%) dissolved oil at ≥50 ppb	Min. arrival time dissolved oil ≥50 ppb (days)	Probability (%) dissolved oil at ≥300 ppb	Min. arrival time dissolved oil ≥300 ppb (days)
Scott Reef NR	31	0.12	3.5	0.21	3	0.21	<0.5	NC	<0.5	NC
Sandy Islet	33.5	0.21	1.5	0.25	1.5	0.25	<0.5	NC	<0.5	NC
Scott Reef North	50	0.04	15	0.04	9	0.04	1.5	0.04	<0.5	NC
Scott Reef South	45	0.04	10.5	0.04	5.5	0.04	0.5	0.04	<0.5	NC
Seringapatam Reef	24.5	0.92	<0.5	NC	0.5	1.04	<0.5	NC	<0.5	NC
Key										
NC	No contact predicted									

Table C - 2: Petroleum Activity credible spill scenario (CS-02) – entrained and dissolved stochastic modelling results for receptors with a probability of contact ≥10% and <14 days

Receptor	Probability (%) entrained oil at ≥10 ppb	Min. arrival time entrained oil ≥10 ppb (days)	Probability (%) entrained oil at ≥1,000 ppb	Min. arrival time entrained oil ≥1,000 ppb (days)	Probability (%) dissolved oil at ≥10 ppb	Min. arrival time dissolved oil ≥10 ppb (days)	Probability (%) dissolved oil at ≥50 ppb	Min. arrival time dissolved oil ≥50 ppb (days)	Probability (%) dissolved oil at ≥300 ppb	Min. arrival time dissolved oil ≥300 ppb (days)
Scott Reef NR	26.5	0.46	2	0.50	1.5	0.50	<0.5	NC	<0.5	NC
Sandy Islet	14	1.62	<0.5	NC	0.5	2.42	<0.5	NC	<0.5	NC
Scott Reef North	21	0.83	0.5	0.92	0.5	2.38	<0.5	NC	<0.5	NC
Scott Reef South	28	0.38	3	0.42	2	0.42	<0.5	NC	<0.5	NC
Seringapatam Reef	13	1.54	<0.5	NC	0.5	5.79	<0.5	NC	<0.5	NC
Key										
NC	No contact predicted									

Table C - 3: Baseline data assessment versus SMPs for receptors predicted at being contacted ≥10% probability and <14 days

Receptor	SM1: Water quality impact	SM2: Sediment quality impact	SM3: Intertidal and coastal habitat	SM4: Seabirds and shorebirds	SM5: Marine megafauna – reptiles	SM5: Marine megafauna – whale sharks, dugong and cetacean	SM6: Benthic habitat	SM7: Marine fish and elasmobranch assemblages	SM8: Fisheries impact	SM9 & 10: Heritage and social impact
Scott Reef (encompasses Scott Reef North, South, Sandy Islet, Scott Reef NR and Seringapatam Reef)									(Locations to be determined in consultation with key stakeholders to reflect current fishing zones/effort)	(Locations to be determined in consultation with key stakeholders)

Key	
	No baseline data available, or existing data are inadequate in quality, scope, or relevance. Caveat: Additional relevant data may exist but be unknown and therefore not included in the assessment.
	Comprehensive baseline data or ongoing monitoring collected within the last 5 years. Data align with Joint Industry SMP parameters and methods, cover required species/communities and span the necessary spatial extent.
	Historical data (>5 years old) that remain of value, or some current but not extensive baseline data. Caveat: Additional relevant data may exist but be unknown and therefore not included in the assessment.
N/A	Not applicable as the receptor is submerged

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Table C - 4: CS-01 Monitoring priority assessment (stochastic modelling results, 10% probability, ≤14 days; source RPS, 2026)

Receptor	Receptor type	DTMI (Floating)	DTMI (Dissolved)	Base tier – floating (%, time)	Base tier – shoreline (%, time)	Base tier – entrained (%, time)	Base tier – dissolved (%, time)	Resultant base tier	Additional monitoring prioritisation criteria	Initial Monitoring Priority
Scott Reef North	Submerged	4	4	High (100%, 0 d 1 h)	n/a (submerged)	High ≥1,000 ppb (15%, 0 d 1 h)	n/a	Tier 1	Submerged reef - Tier 1 driven by floating ≥50 g/m² and entrained ≥1,000 ppb	Tier 1 – high monitoring priority
Scott Reef South	Emergent	4	4	Moderate (16%, 0 d 1 h)	n/a	High ≥1,000 ppb (10%, 0 d 1 h)	n/a	Tier 1	Emergent receptor - RPA as per Table 3-1. Tier 1 driven by entrained ≥1,000 ppb	Tier 1 – high monitoring priority
Sandy Islet	Emergent	4	4	n/a	n/a	Low ≥10 ppb (34%, 0 d 5 h)	n/a	Tier 3	Emergent receptor (part of Scott Reef South) - RPA as per Table 3-1. Contacted by entrained hydrocarbons ≥10 ppb only; lower monitoring priority (entrained-only, OSM-BIP Section 2.2)	Tier 3 – low monitoring priority
Scott Reef NR	Emergent	4	4	n/a	n/a	Low ≥10 ppb (31%, 0 d 3 h)	n/a	Tier 3	Contacted by entrained hydrocarbons ≥10 ppb only; lower monitoring priority (entrained-only, OSM-BIP Section 2.2)	Tier 3 – low monitoring priority
Seringapatam Reef	Submerged	4	4	n/a	n/a (submerged)	Low ≥10 ppb (24%, 0 d 22 h)	n/a	Tier 3	Submerged reef: low entrained-only exposure (French-McCay, 2026)	Tier 3 – low monitoring priority

Table C - 5: CS-02 Monitoring priority assessment (stochastic modelling results, 10% probability, ≤14 days; source RPS, 2026)

Receptor	Receptor type	DTMI (Floating)	DTMI (Dissolved)	Base tier – floating (%, time)	Base tier – shoreline (%, time)	Base tier – entrained (%, time)	Base tier – dissolved (%, time)	Resultant base tier	Additional monitoring prioritisation criteria	Initial Monitoring Priority
Sandy Islet	Emergent	4	4	n/a	n/a	Low ≥10 ppb (14%, 1 d 15 h)	n/a	Tier 3	RPA status: emergent feature - confirm against RPA list (Section 3). Contacted by entrained hydrocarbons ≥10 ppb only; lower monitoring priority (entrained-only, OSM-BIP Section 2.2).	Tier 3 – low monitoring priority
Scott Reef NR	Emergent	4	4	n/a	n/a	Low ≥10 ppb (26%, 0 d 11 h)	n/a	Tier 3	RPA status: emergent feature - confirm against RPA list (Section 3). Contacted by entrained hydrocarbons ≥10 ppb only; lower monitoring priority (entrained-only, OSM-BIP Section 2.2).	Tier 3 – low monitoring priority
Scott Reef North	Submerged	4	4	n/a	n/a (submerged)	Low ≥10 ppb (21%, 0 d 20 h)	n/a	Tier 3	RPA status: not an RPA (submerged reef - monitoring via OM2/OM3/SM6/SM7).	Tier 3 – low monitoring priority
Scott Reef South	Emergent	4	4	n/a	n/a	Low ≥10 ppb (28%, 0 d 9 h)	n/a	Tier 3	RPA status: emergent feature - confirm against RPA list (Section 3). Contacted by entrained hydrocarbons ≥10 ppb only; lower monitoring priority (entrained-only, OSM-BIP Section 2.2).	Tier 3 – low monitoring priority
Seringapatam Reef	Submerged	4	4	n/a	n/a (submerged)	Low ≥10 ppb (13%, 1 d 13 h)	n/a	Tier 3	RPA status: not an RPA (submerged reef - monitoring via OM2/OM3/SM6/SM7).	Tier 3 – low monitoring priority

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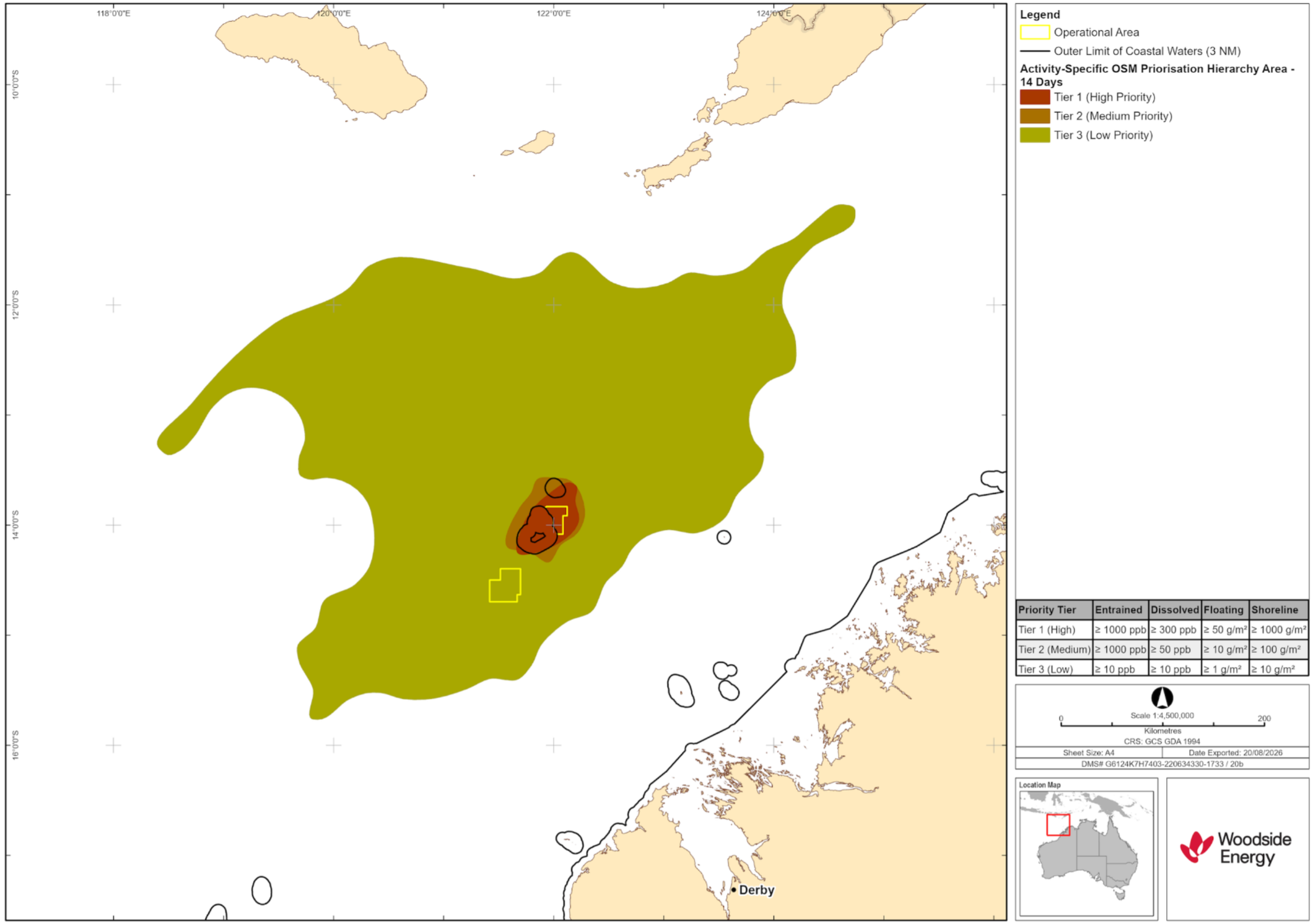


Figure C - 2: Geographical extent of the tiered stochastic exposure areas – CS-01 within the 14-day initial prioritisation window

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C.3 Mobilisation and timing of OMP and SMP implementation

Table C - 6provides a list of OMPs and SMPs relevant to Petroleum Activity activities, as well as indicative timeframes for mobilisation of each OMP and SMP for key receptors. In addition, monitor and evaluate activities will capture initial observations of fauna, habitat, and other sensitive receptors. Water samples will be collected during vessel surveillance for OM1: Hydrocarbon Characterisation, when safe to do so. SCAT teams will begin mobilisation within 48–72 hours of notification and will also document fauna observations. This information will be provided to the IMT to aid early decision making per the process outlined in Section 18.1 of the OSM-BIP.

Table C - 6: Indicative OMP and SMP implementation schedule for OSM activities if initiation criteria are met

Proximity to spill source	Monitoring type	0–48 hours from OSM activation	Within 72 hours of OSM activation	~5–7 days from OSM activation	Weeks 1–2 from OSM activation	Ongoing
Spill site and surrounding waters	OM	• Activation of OMP Team Leads. • Finalise OMPs. • Aerial surveillance – which will also document fauna observations. • Commence activation and mobilisation of OM personnel.	• OM1: Hydrocarbon Characterisation, where resources are available (e.g. Supply Vessel with onboard sampling equipment). • OM2: Hydrocarbons in Water Assessment • OM3: Hydrocarbons in Sediment Assessment • OM5: Rapid Marine Fauna Surveillance • Continue to finalise OMPs. • Continue to activate and mobilise OM personnel.	Continued (as per ongoing arrangements)	Continued (as per ongoing arrangements)	As results from implemented OMPs are available, data are provided to relevant personnel in IMT (e.g. Situation Unit) and used in the Incident Action Planning process for the next operational period. OMP is redesigned or reallocated according to the specifics of the actual spill.
	SM	• Commence activation and mobilisation process. • Activation of SMP Team Leads.	• Continue to activate and mobilise personnel. • Work on finalising SMPs.	• SM1: Water Quality Impact Assessment • SM2: Sediment Quality Impact Assessment • SM6: Benthic Habitat Assessment • SM7: Marine fish and elasmobranch assemblages assessment	Continued	Continue SMP monitoring until termination criteria are met
Sensitive receptors predicted to be contacted within 7 days	OM	• Activation of OMP Team Leads. • Finalise OMPs. • Aerial surveillance – which will also document fauna observations. • OM6: Shoreline Clean-up Assessment • Commence activation and mobilisation of OM personnel.	• OM1: Hydrocarbon Characterisation • OM2: Hydrocarbons in Water Assessment • OM3: Hydrocarbons in Sediment Assessment • OM5: Rapid Marine Fauna Surveillance • Continue to finalise OMPs. • Continue to activate and mobilise OM personnel.	Continued (as per on-going arrangements)	Continued (as per on-going arrangements)	As results from implemented OMPs are available, data are provided to relevant personnel in IMT (Situation Unit Lead) and used in the Incident Action Planning process for the next operational period. OMP is redesigned or reallocated according to the specifics of the actual spill until termination criteria are met
	SM	• Activation of SMP Team Leads and finalisation of SMPs.	• Continue to activate and mobilise personnel. • Work on finalising SMPs.	• SM1: Water Quality Impact Assessment • SM2: Sediment Quality Impact Assessment • SM4: Seabirds and Shorebirds • SM3: Intertidal and Coastal Habitat Assessment • SM5: Marine Mega-fauna Assessment – Reptiles • SM5: Marine Mega-fauna Assessment – Cetaceans, Whale Sharks, Dugong • SM6: Benthic Habitat Assessment • SM7: Marine Fish and Elasmobranch Assemblages assessment • SM8: Fisheries impact assessment • SM9: Heritage Features Assessment • SM10: Social Impact Assessment	Continued	Continue SMP implementation until termination criteria are met.
Sensitive receptors (including shorelines, reefs, banks and shoals) predicted to be contacted week 1–2	OM	–	–	• Additional Activation of OMP Team Leads. • Commence activation and mobilisation of additional OM personnel.	• Continue to finalise OMPs. • Continue to activate and mobilise OM personnel. • OM1: Hydrocarbon Characterisation • OM2: Hydrocarbons in Water Assessment • OM3: Hydrocarbons in Sediment Assessment	As results from implemented OMPs are available, data are provided to relevant personnel in IMT (Situation Unit Leader) and used in the Incident Action Planning process for the next operational period. OMP is redesigned or reallocated according to the specifics of the actual spill until termination criteria are met

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Proximity to spill source	Monitoring type	0–48 hours from OSM activation	Within 72 hours of OSM activation	~5–7 days from OSM activation	Weeks 1–2 from OSM activation	Ongoing
					• OM5: Rapid Marine Fauna Surveillance • OM6: Shoreline Clean-up Assessment	
	SM	–	–	• Additional Activation of SMP Team Leads. • Commence activation and mobilisation of additional SM personnel.	• SM1: Water Quality Impact Assessment • SM2: Sediment Quality Impact Assessment • SM3: Intertidal and Coastal Habitat Assessment • SM4: Seabirds and Shorebirds • SM5: Marine Mega-fauna Assessment – Reptiles • SM5: Marine Mega-fauna Assessment – Cetaceans, Whale Sharks, Dugong • SM6: Benthic Habitat Assessment • SM7: Marine Fish and Elasmobranch Assemblages assessment • SM8: Fisheries impact assessment • SM9: Heritage Features Assessment • SM10: Social Impact Assessment	Continue SMP monitoring until termination criteria are met

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C.4 Determine OSM resourcing requirements and assess capability for the activity

To guide the OSM resourcing requirements assessment for the Petroleum Activity, the scenario most likely to require the greatest initial capability was selected from the two WCCS scenarios (see) based on the stochastic modelling results focusing on the scenario with the greatest predicted number of receptors contacted within 14 days and at the highest contact probabilities. If a receptor is only contacted by low concentrations of entrained hydrocarbons and not by any other hydrocarbon phase, it will be considered a lower priority during the initial monitoring response as outlined in Section 2.2 of the OSM-BIP.

The instantaneous release of 200 m^3 of MGO at Operational Area A (CS-01) was identified as the worst-case scenario, affecting the most receptors within 14 days and determined to require the greatest OSM capability.

The tier rankings in Section C.2 (Table C - 4 and Table C - 5) are derived from the stochastic suite and reflect each receptor's overall risk profile across the full range of modelled trajectories. In any single spill trajectory, a receptor may or may not be contacted within 14 days depending on the prevailing metocean and weathering conditions of that run.

The first 14 days of the response has been selected as the focus area for the OSM resourcing assessment as it is the period during which resources are likely to be overwhelmed, before additional resources (including appropriately qualified personnel, suitable vessels and additional monitoring equipment) can be scaled in locally and from interstate and international resources. Other factors influencing the selection of the scenario with the highest capability requirements were location of the spill, proximity to receptors, and hydrocarbon properties. The OSM Services Provider Contract includes provision of scale-up resources, which would be considered and mobilised as soon as practicable following the spill.

Consideration of Key Ecological Features, Biologically Important Areas and transient receptors

A number of broadscale ecological features are located within the OSM Planning Area and have been considered in monitoring prioritisation and OSM capability planning for the Petroleum Activity activities. The following Key Ecological Features (KEFs) (and their distances to the Operational Area) are noted in Table 4-14 of the EP:

- Continental Slope Demersal Fish Communities KEF – overlaps Operational Area
- Seringapatam Reef and Commonwealth waters in the Scott Reef Complex KEF – overlaps Operational Area
- Ancient coastline at 125 m depth contour KEF – 74 km south-east of Operational Area

The Continental Slope Demersal Fish Communities KEF and Seringapatam Reef and Commonwealth waters in the Scott Reef Complex KEF overlap the Petroleum Activity Operational Area, so are at a higher risk of contact with hydrocarbons. All KEFs within the OSM Planning Area are described in detail in Section 4.7 and Appendix C of the EP. These KEFs include subsea receptors therefore, OSM planning and resourcing for this activity includes relevant monitoring requirements, such as water quality, sediment quality, benthic habitats and fish for these features.

The OSM Area also overlaps a number of Biologically Important Areas (BIAs) with protected species potentially occurring in the area, as described in Section 4.6 of the EP. A number of the BIAs and protected species are located within the geographical extents of other receptors, such as marine turtles within the Scott Reef Nature Reserve and KEF so these BIAs and protected species would automatically be included in the relevant SMPs for that receptor (refer to Table C - 7). Where BIAs, protected species and KEFs are situated away from the monitoring priorities, they will be captured in the Offshore Environs monitoring unit described in Table C - 7.

Monitoring Units

Using the stochastic modelling results, Woodside has grouped the monitoring priorities for the Petroleum Activity into monitoring 'units' (Table C - 7). These units incorporate all of the possible receptors that may be contacted by the Petroleum Activity scenarios shown in Table 2-1 at a probability ≥10%. Receptors only contacted by entrained hydrocarbons and no other phase of hydrocarbon were not included. These unit groupings are based on consultation with experienced monitoring personnel and planners, who often group these receptors together for time-bound monitoring projects. The grouping of units is based on factors such as access and distance to ports, simultaneous operations (SIMOPS) of multiple vessels and teams working in a close area, travel time between individual locations/receptors and time taken to collect samples for each SMP.

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The monitoring units presented in Table C - 7 also include KEFs, BIAs and transient species. Additional information on the seasonality of the receptors can be found in Appendix B of the OSM-BIP and in Section 4.7 of the EP. Each monitoring unit will require 1–2 teams during the initial response (first 14 days). The number of teams allocated to each unit will depend on the extent of the spill, the outcome of the monitoring prioritisation finalised at the time of the spill (Section 13 of the OSM-BIP), the ALARP assessment, and SIMOPs.

It should be noted that not all monitoring units will be contacted by a single spill and that the list below has been generated from stochastic modelling results.

Table C - 7: Monitoring units for the Petroleum Activity relevant to stochastic modelling results

Receptors within each Unit	Type
Scott Reef	
Scott Reef*	Nature Reserve
Scott Reef North*	Reef, Shoals and Banks
Scott Reef South	Reef, Shoals and Banks
Sandy Islet (emergent feature of Scott Reef South)	Reef, Shoals and Banks
Whale shark (foraging)	BIA
Marine turtle	BIA
Pygmy blue whale (distribution)	BIA
Seabird and shorebirds	BIA
Continental Slope Demersal Fish Communities*	KEF
Ancient Coastline at 125 m depth contour*	KEF
Seringapatam Reef and Commonwealth waters in the Scott Reef Complex*	KEF
Control	
Control sites	All

**Submerged receptor that has no features above the sea surface.*

Stochastic modelling

OSM resourcing requirements were determined using stochastic modelling. Deterministic modelling was not undertaken, as the existing response capability arrangements (refer to Sections 9 and 10 of the OSM-BIP) provide sufficient capacity to meet or exceed the resourcing requirements for all receptors forecast to be contacted by floating, shoreline and/or dissolved hydrocarbons (at ≥10% probability) by stochastic modelling within the initial two weeks of the Petroleum Activity.

The resources required to commence operational and scientific monitoring components during weeks 1–2 are presented in Table C - 8 and Table C - 9 respectively. These are based on the monitoring priorities (Table C - 4 and Table C - 5), the implementation schedule (Table C - 6) and the worst-case stochastic results, and include the resources for monitoring unaffected control sites.

Woodside's OSM capability arrangements are detailed in Sections 9 and 10 of the OSM-BIP. These sections demonstrate that Woodside has established arrangements to mobilise up to 5-6 teams for most OMPs and SMPs in the initial stages of a spill, and provision for scale-up capability, confirming that despite the use of stochastic modelling (which means an overconservative estimate of capability has been used for this activity) the OSM capability requirements for the Petroleum Activity (Table C - 8 and Table C - 9) are satisfied by the existing capability arrangements in the OSM-BIP.

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Table C - 8: Resources required for initially implementing operational monitoring plans for the Petroleum Activity spill scenarios

OMP	Week 1 (total)	Week 2 (total)	Arrangement
OM1: Hydrocarbon characterisation*^	1 team Scott Reef Unit[#] **Total 1 team**	1 team Scott Reef Unit **Total 1 team**	OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers Laboratory arrangements
OM2: Hydrocarbon in water assessment*	Refer to OMP: Hydrocarbon properties and weathering behaviour at sea resourcing* (all sites)		OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers
OM3: Hydrocarbon in sediment assessment*	Refer to OMP: Hydrocarbon properties and weathering behaviour at sea resourcing* (all sites)		OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers
OM5: Rapid marine fauna surveillance	1 team to conduct aerial surveys for Scott Reef Unit (2 observers per aircraft) **Total 1 team** Note: Fauna related SMPs are likely to be initiated simultaneously or following aerial assessment with vessel and ground based fauna surveys carried out as part of the relevant fauna SMP.		OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers Aviation contractors
OM6: Shoreline Clean-up Assessment	Detail on resources required for shoreline clean-up assessment is presented in Section 5.6.1		Australian Marine Oil Spill Centre (AMOSC) Master Services Agreement (MSA) and/or OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers State/Territory Response Teams and AMSA National Response Team
OM7: Air quality modelling (responder health and safety)	1 model	N/A	3rd party modelling provider / Oil Spill Response Organisation
Total number of teams	**2 teams**	**2 teams**	

[#] Specific monitoring units are mentioned for planning and guidance purposes based on a worst-case planning approach. In the event of an actual spill, other locations and/or receptors may be contacted and the ability to access these locations (i.e. with consideration of safety and simultaneous operations (SIMOPS)) would be assessed. This would be identified and managed as part of implementation as per the guidance in Section 13 of the BIP.

** Initial co-mobilisation between OMP: Hydrocarbon properties and weathering behaviour at sea, OMP: Water quality assessment, and OMP: Sediment quality assessment*

^ These resources may not be required if relevant scientific monitoring components' initiation criteria have been triggered.

Table C - 9: Resources required for initially implementing scientific monitoring plans for the Petroleum Activity spill scenarios

SMP	Week 1 (total)	Week 2 (total)	Arrangement
SM1: Water quality impact assessment *^	1 team Scott Reef Unit[#] 1 team control site(s) **Total 2 teams**	1 team Scott Reef Unit 1 team control site(s) **Total 2 teams**	OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers Laboratory arrangement
SM2: Sediment quality impact assessment *	Refer to SMP: Water quality impact assessment* (all sites)		OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers Laboratory arrangement
SM3: Intertidal and coastal habitat assessment	1 team Scott Reef Unit 1 team control site(s) **Total 2 teams**	1 team Scott Reef Unit 1 team control site(s) **Total 2 teams**	OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers Laboratory arrangement
SM4: Seabirds and shorebirds^	1 team to conduct initial aerial surveys for Scott Reef Unit **Total 1 aerial team** 1 team to conduct vessel-based surveys for Scott Reef 1 team control site(s) (surveys would include all fauna [birds, reptiles, cetaceans, dugong and whale shark]) **Total 2 vessel-based teams** 1 team to conduct ground-based surveys for Scott Reef[#] 1 team control site(s) (1 experienced ornithologists per team) **Total 2 ground-based teams**	1 team to conduct initial aerial surveys for Scott Reef Unit **Total 1 aerial team** 1 team to conduct vessel-based surveys for Scott Reef 1 team control site(s) (surveys would include all fauna [birds, reptiles, cetaceans, dugong and whale shark]) **Total 2 vessel-based teams** 1 team to conduct ground-based surveys for Scott Reef[#] 1 team control site(s) (1 experienced ornithologists per team) **Total 2 ground-based teams**	OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers Laboratory arrangement
SM5: Marine mega-fauna assessment – whale shark, dugong and cetaceans^	Aerial surveys refer to SMP: Seabirds and shorebirds Vessel surveys refer to SMP: Seabird and shorebirds	Aerial surveys refer to SMP: Seabirds and shorebirds Vessel surveys refer to SMP: Seabird and shorebirds	OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers Laboratory arrangement
SM5: Marine mega-fauna assessment – reptiles^	Aerial surveys refer to SMP: Seabirds and shorebirds Vessel surveys refer to SMP: Seabird and shorebirds Ground based survey refer to SMP: Seabird and shorebirds (including 1 member experienced with ground turtle surveys)	Aerial surveys refer to SMP: Seabirds and shorebirds Vessel surveys refer to SMP: Seabird and shorebirds Ground based survey refer to SMP: Seabird and shorebirds (including 1 member experienced with ground turtle surveys)	OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers Laboratory arrangement

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SMP	Week 1 (total)	Week 2 (total)	Arrangement
SM6: Benthic habitat assessment	1 team Scott Reef Unit 1 team control site(s) **Total 2 teams**	1 team Scott Reef Unit 1 team control site(s) **Total 2 teams**	OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers Laboratory arrangement
SM7: Marine fish and elasmobranch assemblages assessment	1 team Scott Reef Unit 1 team control site(s) **Total 2 teams**	1 team Scott Reef Unit 1 team control site(s) **Total 2 teams**	OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers Laboratory arrangement
SM8: Fisheries impact assessment	**Total 1 team** to cover all relevant Commonwealth and State fisheries – initial locations determined in consultation with key stakeholders to reflect current fishing zones/effort		OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers Laboratory arrangement
SM9: Heritage features assessment	**1 team**	**1 team**	OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers Laboratory arrangement
SM10: Social impact assessment	**1 team**	**1 team**	OSRL OSM Supplementary Service Agreement
Total number of teams	**16 teams**	**16 teams**	

[#] Specific monitoring units are mentioned for planning and guidance purposes based on a worst case planning approach. In the event of an actual spill, other locations and/or receptors may be contacted and the ability to access these locations (i.e. with consideration of safety and SIMOPS) would be assessed. This would be identified and managed as part of implementation as per the guidance in Section 13 of the BIP.

** Initial co-mobilisation between SMP: Water quality impact assessment and SMP: Sediment quality impact assessment.*

^ Can initially be performed by the same team as the relevant OMP. This SMP may replace the relevant OMP, if the relevant OMP's termination criteria are triggered.

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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
Abrolhos Islands: Pelseart Group
Abrolhos Islands: Wallabi Group
Abrolhos 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

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Enderby Island – Dampier
Rosemary Island – Dampier
Legendre Island – Dampier
Karratha Gas Plant
KGP to Withnell Creek
KGP to Northern Shore
KGP Fire Pond & Estuary
KGP to No Name Creek
Broome
Sahul Shelf Submerged Banks and Shoals
Clerke Reef (Rowley Shoals)
Imperieuse Island (Rowley Shoals)
Mermaid Reef (Rowley Shoals)
Scott Reef
Oiled Wildlife Response
Exmouth
Dampier region
Shark Bay

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APPENDIX H OIL POLLUTION FIRST STRIKE PLAN

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Woodside Energy

Browse to NWS Project Geophysical and Geotechnical Surveys (Commonwealth) – Oil Pollution First Strike Plan

Corporate HSE

Hydrocarbon Spill Preparedness

September 2026

Revision 0

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CONTROLLING AGENCIES AND INCIDENT CONTROLLERS

Source	Location	Level	Jurisdictional Authority/ Hazard Management Agency	Control Agency	Incident Controller
Spill from facility including subsea infrastructure *Note: pipe laying and accommodation vessels are considered a "facility" under Australian regulations*	Commonwealth waters	1	National Offshore Petroleum Safety and Environmental Management Authority (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 and Major Infrastructure (DTMI)	DTMI	DTMI Incident Controller
	Within port limits	1	DTMI	Port Authority	Port Harbour Master
		2/3		Port Authority / DTMI	Port Harbour Master / DTMI Incident Controller
Spill from vessel *Note: Shipboard Oil Pollution Emergency Plan (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	DTMI	DTMI	DTMI Incident Controller
	Within port limits	1	DTMI	Port Authority	Port Harbour Master
		2/3		Port Authority/ DTMI	Port Harbour Master/ DTMI Incident Controller

SPILLS IN STATE WATERS

In the event of a hydrocarbon spill (hereafter 'spill') where 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 and Major Infrastructure (DTMI).

Initially Woodside will be required to make available an appropriate number of suitably qualified persons to work in the DTMI Incident Management Team (IMT) (Appendix F: Woodside Liaison Officer resources to DTMI). DTMI's role as the Controlling Agency in State Waters does not negate the requirement for Woodside to have appropriate plans and resources in place to adequately respond to a marine hydrocarbon spill incident in State Waters or to commence the initial response actions to a spill prior to DTMI establishing incident control in line with DTMI *Offshore Petroleum Industry Guidance Note – Marine Oil Pollution: Response and Consultation Arrangements* (July 2020). Cost recovery arrangements for offshore marine pollution incidents (MOP) are in accordance with Section 9 of the Guidance Note: https://www.transport.wa.gov.au/mediaFiles/marine/MAC_P_Westplan_MOP_OffshorePetroleumIndGuidance.pdf

Woodside's Incident Management Structure for a hydrocarbon spill, including Woodside Liaison Officer's command structure within DTMI 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.

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RESPONSE PROCESS OVERVIEW

	For guidance on credible scenarios and hydrocarbon characteristics, refer to APPENDIX A	
ALL INCIDENTS	Notify the Woodside Communication Centre (WCC) on: [1]	
	If further support required, Incident Commander or delegate to implement this Oil Pollution First Strike Plan per relevant actions detailed in Table 1-1 and Table 2-1.	
LEVEL 1	**FACILITY INCIDENT**	**VESSEL INCIDENT**
	Coordinate pre-identified tactics in Table 2-1 of this Oil Pollution First Strike Plan Remember to download each Operational Plan.	Notify DTMI and coordinate pre-identified tactics in Table 2-1 of this Oil Pollution First Strike Plan Remember to download each Operational Plan.
	If the spill escalates such that the site cannot manage the incident, inform the WCC on: [1] and escalate to a level 2/3 incident.	
LEVEL 2/3	**FACILITY INCIDENT**	**VESSEL INCIDENT**
	Hand over control to CIMT and notify DTMI	Hand over control to AMSA and stand up CIMT to assist
	Commence quick revalidation of the recommended strategies on Table 2-1 taking into consideration seasonal sensitivities and current situational awareness. Undertake validated strategies.	If requested by AMSA: Commence quick revalidation of the recommended strategies on Table 2-1 taking into consideration seasonal sensitivities and current situational awareness. Undertake validated strategies
	Create an Incident Action Plan (IAP) for 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 Appendix A of the Oil Spill Preparedness and Response Mitigation Assessment (OSPRMA).	If requested by AMSA: Create an IAP for 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 Appendix A of the OSPRMA.

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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 Emergency Response Plans and/or Bridging Documents							
Timing	**By**	**To**	**Name**	**Contact**	**Instruction**	**Form**	**Complete? (✓)**
NOTIFICATIONS FOR ALL LEVELS OF SPILL							
Immediately	Offshore Installation Manager (OIM) or Vessel Master	Woodside Communication Centre (WCC)	Corporate Incident Management Team Incident Commander (CIMT IC)	[1]	Verbally notify WCC of event and estimated volume and hydrocarbon type. If further support required, implement this Oil Pollution First Strike Plan per relevant actions detailed below and in Table 2-1	Verbal	
Within 2 hours	Woodside Site Rep (WSR), CIMT IC or Delegate	National Offshore Petroleum Safety Environmental Management Authority (NOPSEMA[1])	Incident notification office	[2]	Verbally notify NOPSEMA for spills >80 litres[2]. Record notification using Initial Verbal Notification Form or equivalent and send to NOPSEMA as soon as practicable (cc to NOPTA and DMPE).	Link	
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 DMPE) • NOPSEMA: [2] • NOPTA: [3] • DMPE: [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 the Environment Plan (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	Western Australian (WA) Department of Transport and Major Infrastructure (DTMI)	DTMI Maritime Environmental Emergency Response Unit (MEER) Duty Officer	[5]	Verbally notify DTMI 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, DTMI to be notified if spill is likely to extend into WA State waters. Request DTMI to provide Liaison to Woodside IMT.	[5]	
Within 24 hours of Woodside reporting the incident to the appropriate authority	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	
Within 24 hours of Woodside reporting the incident to the appropriate authority	CIMT IC or Delegate	WA Fishing Industry Council (WAFIC)	Industry Liaison Officer	[7]	Notification to WAFIC via email within 24 hours of Woodside reporting the incident to the appropriate authority: [7]	Verbal/ email	
As soon as practicable	CIMT IC or Delegate	Department of Climate Change, Energy, the Environment and Water (DCCEEW) Director of National Parks (DNP)	Marine Park Compliance Duty Officer	[8]	The DNP should be made aware of oil/ gas pollution incidences which occur within a marine park or are likely to impact a marine park as soon as possible. Notification should be provided to the 24 hour Marine Compliance Duty Officer. This notification should include: • titleholder details • time and location of the incident (including name of marine park potentially affected) • proposed response arrangements as per the Oil Pollution Emergency Plan (OPEP) • confirmation of providing access to relevant monitoring and evaluation reports when available; and • contact details for the response coordinator.	Verbal	
As soon as practicable if there is potential for oiled	CIMT IC or Delegate	WA Department of Biodiversity,	Duty Officer	[9]	Phone call notification	Verbal	

[1] Notification to NOPSEMA must be from a Woodside Representative.

[2] An uncontrolled release of petroleum liquids exceeding 80 litres is required to be reported as a dangerous occurrence related to safety at a facility, under clause 82 of Schedule 3 of the OPGGS Act and Part 4 of the Safety Regulations.

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In the event of an incident between campaign vessels, also activate relevant Emergency Response Plans and/or Bridging Documents							
Timing	**By**	**To**	**Name**	**Contact**	**Instruction**	**Form**	**Complete? (✓)**
wildlife or the spill is expected to contact land or waters managed by WA Department of Biodiversity, Conservation and Attractions		Conservation and Attractions (DBCA)					
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 the Browse Trunkline Geophysical and Geotechnical Survey. 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 OSPRMA for the Browse Trunkline Geophysical and Geotechnical Survey. Relevant cultural authorities will be re-assessed throughout the response period.	Verbal initially	
ADDITIONAL NOTIFICATIONS TO BE MADE ONLY IF SPILL IS FROM A VESSEL							
"Without delay" as per Protection of the *Sea (Prevention of Pollution from Ships) Act 1983* (Cth) s 11(1)	Vessel Master	Australian Maritime Safety Authority (AMSA)	Joint Rescue Coordination Centre (JRCC)	[10]	Verbally notify AMSA RCC of the hydrocarbon spill. Follow up with a written Harmful Substances Report (POLREP) as soon as practicable following verbal notification.	[10]	
ADDITIONAL LEVEL 2/3 NOTIFICATIONS							
As soon as practicable	CIMT IC or Delegate	AMOSC	AMOSC Duty Manager	[11]	Notify AMOSC that a spill has occurred and follow-up with an email from the **CIMT IC/ CIMT Deputy IC/ CMT Leader** to formally activate AMOSC. Determine what resources are required consistent with the AMOSPlan and detail in a Service Contract that will be sent to Woodside from AMOSC upon activation.	[11]	
As soon as practicable	CIMT IC or Delegate	Oil Spill Response Limited (OSRL)	OSRL Duty Manager	[12]	Notification for all services: Contact OSRL duty manager and request assistance from technical advisor. Send the completed notification form to OSRL as soon as practicable.	[12]	
					Mobilisation of response personnel/ equipment: For mobilisation of response personnel/ resources, send the Mobilisation Form to OSRL as soon as practicable. The mobilisation form must be signed by a nominated callout authority from Woodside i.e. **CIMT IC/ CIMT Deputy IC/ CMT Leader**. OSRL can advise the names on the call out authority list, if required.	[12]	
					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. **CIMT IC/ CIMT Deputy IC/ CMT Leader**. OSRL can advise the names on the call out authority list, if required.	[12]	
As soon as practicable if extra personnel are required for incident support	CIMT IC or Delegate	Marine Spill Response Corporation (MSRC)	MSRC Response Manager	[13]	Activate the contract with MSRC (in full) for the provision of up to 14 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	

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2. RESPONSE TECHNIQUES

Table 2-1: Response techniques

Technique	Hydrocarbon type	Level	Pre- Identified Tactics	Responsible	ALARP Commitment Summary	Link to Operational Plans for notification numbers and actions
	MDO					
Monitor and evaluate – tracking buoy	**Yes**	**ALL**	Deploy the oil spill tracking buoy within 2 hours in the event of release of hydrocarbons to the marine environment. If no oil spill tracking buoy is available, mobilise unit from the King Bay Supply Facility (KBSF) stockpile.	Operations	**WITHIN 2 HOURS:** Tracking buoy deployed within 2 hours.	Surveillance and Reconnaissance to Detect Hydrocarbons and Resources at Risk in Operational Monitoring Operational Plan. Deploy tracking buoy in accordance with Link.
Monitor and evaluate – predictive modelling	**Yes**	**ALL**	Undertake initial modelling using OceansMap and weathering fate analysis using Automated Data Inquiry for Oil Spills (ADIOS) or refer to the hydrocarbon information in Appendix A.	Environment	**WITHIN 6 HOURS:** Initial modelling within 6 hours using the OceansMap tool.	Predictive Modelling of Hydrocarbons to Assess Resources at Risk in Operational Monitoring Operational Plan. *Planning Section to download immediately and follow steps*
	Yes	**ALL**	Send Oil Spill Trajectory Modelling (OSTM) form (Appendix B, Form 7) to RPS Response ([14]). Outputs will be uploaded to OceansMap by RPS.	Environment	**WITHIN 24 HOURS:** Detailed modelling received within 4 hours of RPS Response receiving information from Woodside.	
Monitor and evaluate – aerial surveillance	**Yes**	**ALL**	Aviation Unit Leader to commence aerial observations in daylight hours. Aerial surveillance observer to complete log in Appendix B Form 8.	Logistics – Aviation	**WITHIN 24 HOURS:** 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 Operational Monitoring Operational Plan. *Planning Section to download immediately and follow steps*
Monitor and evaluate – satellite tracking	**Yes**	**ALL**	Environment Unit Leader to action satellite imagery services. This may be obtained via: • AMOSC Duty Manager: [11] • OSRL Duty Manager: [12] • KSAT: [15] • Others identified by CIMT	Environment	**WITHIN 24 HOURS:** Service provider will confirm availability of an initial acquisition within 2 hours. Data received to be uploaded into Woodside Common Operating Picture.	
Revalidate pre-operational NEBA	**Yes**	**ALL**	Environment Unit Leader to revalidate pre-operational NEBA against current situational awareness from monitor and evaluate techniques.	Environment	**WITHIN 24 HOURS**: Revalidate pre-operational NEBA and incorporate into IAP	Pre-operational NEBAs
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	Desktop pre-emptive assessment of sensitive receptors to help determine Response Protection Areas (RPAs) to guide deployment of response personnel	Pre-emptive Assessment of Sensitive Receptors in Operational Monitoring Operational Plan.
Operational monitoring – shoreline assessment	**Yes**	**ALL**	Consider the need to mobilise resources to undertake shoreline assessment surveys.	Planning or Environment	In agreement with WA DTMI, deployment of 2 specialists trained in OM6: Shoreline Clean-up Assessment Technique for each of the RPAs with predicted impacts.	Mobilise OSM service via OSRL: [12] Refer to OSM Bridging Implementation Plan – Part B for additional implementation information: Link Refer to Joint Industry Operational And Scientific Monitoring Plan Framework 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	**WITHIN 4 HOURS**: Notify service provider of spill event. **OSM:** 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 [now AEP], 2021)	
Surface dispersant	**No**	**N/A**	This response strategy is not recommended.			
Containment and recovery	**No**	**N/A**	This response strategy is not recommended.			
Mechanical dispersion	**No**	**N/A**	This response strategy is not recommended.			
In-situ burning	**No**	**N/A**	This response strategy is not recommended.			
Shoreline protection and deflection	**No**	**N/A**	This response strategy is not recommended.			

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Technique	Hydrocarbon type	Level	Pre- Identified Tactics	Responsible	ALARP Commitment Summary	Link to Operational Plans for notification numbers and actions
	MDO					
Shoreline clean-up	**Yes**	**ALL**	Equipment from Woodside, AMOSC and State stockpiles and relevant personnel mobilised. Consideration of mobilisation of interstate/international shoreline clean-up equipment and relevant personnel (i.e. OSRL).	Logistics and Planning	**WITHIN 24 HOURS:** Relevant Tactical Response Plans (TRPs) identified for activation within 24 hours of a release. **WITHIN 24-48 HOURS:** In liaison with WA DTMI (for Level 2/3 incidents), deployment of 1 shoreline clean-up team to contaminated RPA(s). Equipment mobilised from closest stockpile within 24-48 hours. Supplementary equipment mobilised from AMOSC and State stockpiles within 48 hours. Supplementary equipment mobilised from OSRL within 72 hours (if required). Access to ~213 m^3 of solid and liquid waste storage available within 48 hours upon activation of 3rd party contract.	Shoreline Clean-up Operational Plan *Logistics Section to download immediately and follow steps*
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 (TRP) 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

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3. RESPONSE PROTECTION AREAS

Action: Provide relevant Control Agency with applicable Tactical Response Plans for any Response Protection Areas (RPAs) identified during operational monitoring.

Based on hydrocarbon spill modelling results, the sensitive receptors outlined in Table 3-1 are identified as priority protection areas, as they have the potential for shoreline hydrocarbon accumulations at or above impact threshold levels within 48 hours of a spill.

Table 3-1: Receptors for Priority Protection with Potential Impact within 48 Hours (Credible Scenario-01, Operational Area A)

Receptor	Distance / direction from Operational Area (km)	Min. time to shoreline contact (above 100 g/m^2) in days	Max. shoreline accumulation (above 100 g/m^2) in m^3	Tactical Response Plans
Sandy Islet (emergent component of Scott Reef South)	5.5	0.4 (10 hours)	80 [3]	Scott Reef

Hydrocarbon spill modelling results for Credible Scenario-02 in Operational Area B indicate that the following sensitive receptors have the potential to be contacted by hydrocarbons beyond 48 hours of a spill:

- Sandy Islet (emergent component of Scott Reef South) – 10 m^3 (2.25 days or 54 hours)
- Ashmore Reef – 11 m^3 (17.2 days or 413 hours)

Tactical Response plans for these locations can be accessed via the link here and include the details of potential forward operating bases and staging areas.

Oil Spill Trajectory Modelling specific to the spill event will be required to determine the regional sensitive receptors that may be contacted beyond 48 hours of a spill.

Figure 3-1 illustrates the location of regional sensitive receptors in relation to the Browse Geophysical and Geotechnical Survey Operational Area.

Consideration should be given to other stakeholders (including mariners) in the vicinity of the spill location. Table 3-2 indicates the assets within the vicinity of the Browse Geophysical and Geotechnical Survey Operational Area.

Table 3-2: Assets in the vicinity of the Browse Geophysical and Geotechnical Survey Operational Area

Asset	Distance / direction from Operational Area	Operator
Ichthys Venturer Floating Production Storage Offtake (FPSO)	123.7 km east of Operational Area A	INPEX
Montara Venture FPSO	288.6 km north east of Operational Area A	Jadestone

[3] *Maximum accumulated hydrocarbon volume at any individual shoreline receptor (a single worst case replicate simulation). The maximum accumulated hydrocarbon volume at any individual shoreline receptor (averaged over all replicate simulations) was 2 m^3.*

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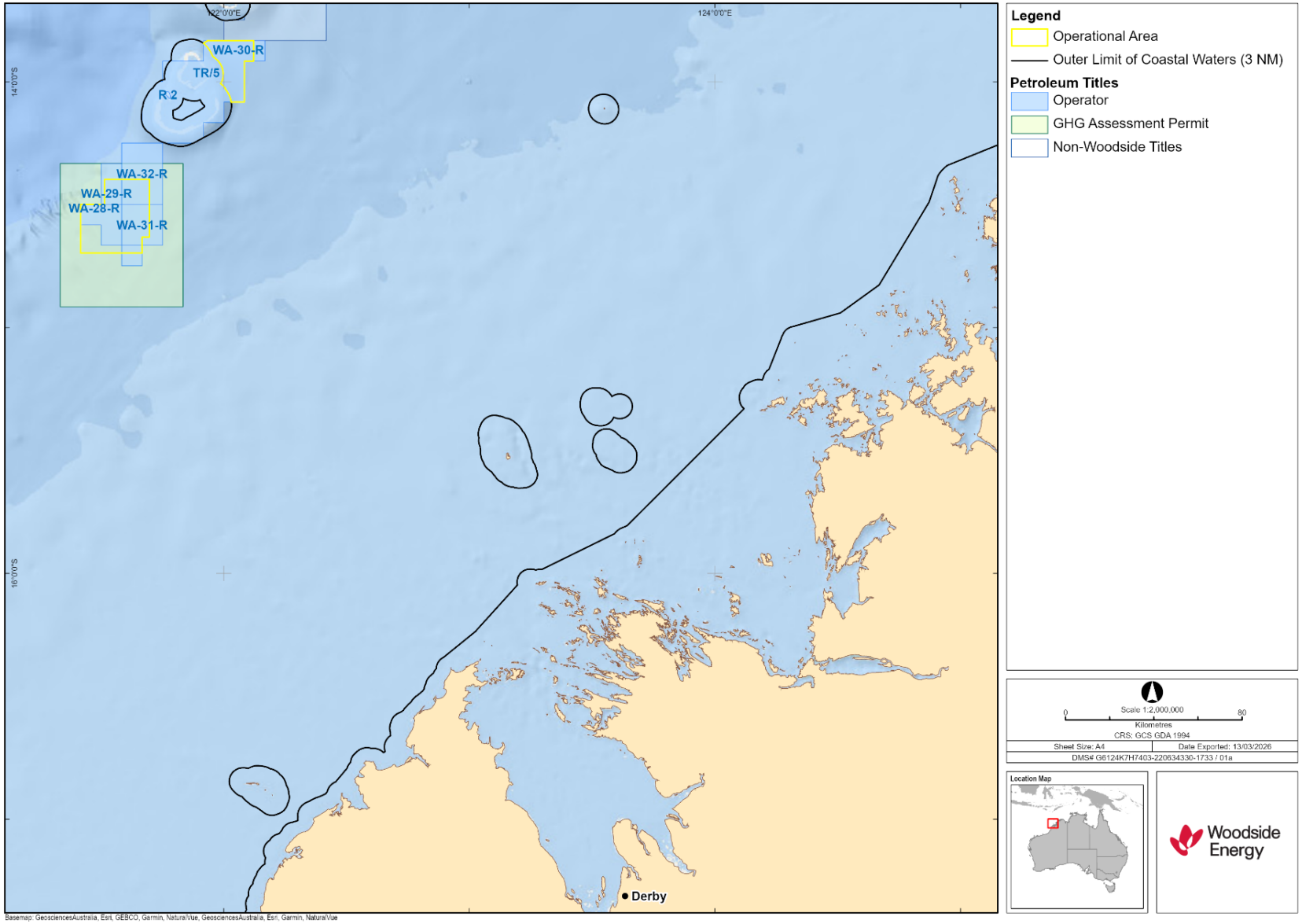


Figure 3-1: Operational Area

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4. DISPERSANT APPLICATION

Dispersant is not considered an appropriate response strategy for this activity as described in the Browse Geophysical and Geotechnical Surveys Environment Plan, Appendix D (Woodside's Oil Spill Preparedness and Response Mitigation Assessment).

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5. GLOSSARY AND ABBREVIATIONS

Term	Definition
ADIOS	Automated Data Inquiry for Oil Spills
AEP	Australian Energy Producers
ALARP	As low as reasonably practicable. Demonstration through reasoned and supported arguments that there are no other practicable options that could reasonably be adopted to reduce risks further.
AMOSC	Australian Marine Oil Spill Centre
AMSA	Australian Maritime Safety Authority
APPEA	Australian Petroleum Production & Exploration Association (became AEP in 2023)
BP	Boiling point
CIMT	Corporate Incident Management Team
CS	Credible Scenario
DBCA	Western Australian Department of Biodiversity, Conservation and Attractions
DCCEEW	Commonwealth Department of Climate Change, Energy, the Environment and Water
DMPE	Western Australian Department of Mining, Petroleum and Exploration
DNP	Director of National Parks
DPIRD	Western Australian Department of Primary Industries and Regional Development
DTMI	Western Australian Department of Transport and Major Infrastructure
EOC	Emergency Operations Centre
EP	Environment Plan
FOB	Forward Operating Base
FPSO	Floating Production Storage and Offloading
HMA	Hazard Management Agency
HSE	Health, safety and environment
IAP	Incident Action Plan
IC	Incident Commander
ICC	Incident Control Centre
IMT	Incident Management Team
KBSB	King Bay Supply Base
MDO	Marine Diesel Oil
MEECC	Maritime Environmental Emergency Coordination Centre
MEER	Maritime Environmental Emergency Response
MGO	Marine gas oil
MOP	Marine oil pollution
MSRC	Marine Spill Response Corporation
N/A	Not applicable / available
NEBA	Net Environmental Benefit Analysis
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority (Australia)
OIM	Offshore Installation Manager
OPEP	Oil Pollution Emergency Plan

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Term	Definition
OSM	Operational and Scientific Monitoring
OSPRMA	Oil Spill Preparedness and Response Mitigation Assessment
OSRL	Oil Spill Response Limited
OSTM	Oil Spill Trajectory Modelling
OTL	Onshore Team Leader
PIC	Person In Charge
POLREP	Pollution Report
RCC	Rescue Coordination Centre
RPA	Response Protection Area
SCAT	Shoreline Clean-up Assessment Technique
SMPC	State Marine Pollution Coordinator
SOPEP	Shipboard Oil Pollution Emergency Plan
TRP	Tactical Response Plan
WA	Western Australia
WAFIC	WA Fishing Industry Council
WCC	Woodside Communications Centre
WCCS	Worst Case Credible Scenario
WSR	Woodside representative

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APPENDIX A CREDIBLE SPILL SCENARIOS AND HYDROCARBON INFORMATION

Table A-1: Credible spill scenarios and hydrocarbon information

Scenario	Product	Density (g/cm^3)	Volume	Residue	Weathering rate		Suggested ADIOS2 Analogue[4]
CS-01 (WCCS) An instantaneous release due to a vessel collision at Operational Area A	Marine Gas Oil (MGO)	0.829 at 25 °C	200 m^3	5% of 200 m^3 (10 m^3)	12 hours (BP < 180 °C)	6%	Diesel Fuel Oil - Southern ISA 1 (API 37.2)
					24 hours (180 °C < BP < 265 °C)	34.6%	
					Several days (265 °C < BP < 380 °C)	54.4%	
CS-02 An instantaneous release due to a vessel collision at Operational Area B	MGO	0.829 at 25 °C	200 m^3	5% of 200 m^3 (10 m^3)	12 hours (BP < 180 °C)	6%	Diesel Fuel Oil - Southern ISA 1 (API 37.2)
					24 hours (180 °C < BP < 265 °C)	34.6%	
					Several days (265 °C < BP < 380 °C)	54.4%	

[4] 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 AND TEMPLATES

Table B-1: Notification forms

No.	Form Name	Link
1	Record of initial verbal notification to NOPSEMA template	Link
2	NOPSEMA Incident Report Form	[2]
3	Harmful Substances Report (POLREP – AMSA)	[10]
4	Marine Pollution Report (POLREP – DTMI)	[5]
5	AMOSC Service Contract	[11]
6a	OSRL Initial Notification Form	[12]
6b	OSRL Mobilisation Activation Form	[12]
6c	OSRL Operational and Scientific Monitoring Service Mobilisation Form	[12]
7	RPS Response Oil Spill Trajectory Modelling Request	[14]
8	Aerial Surveillance Observer Log	Link
9	Tracking buoy deployment instructions	Link

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FORM 1 – Record of initial verbal notification to NOPSEMA

NOPSEMA phone: [2]		
Date of call		
Time of call		
Call made by		
Call made to		
Information to be provided to NOPSEMA:		
Date and time of incident / time caller became aware of incident		
Details of incident	**1. Location**	
	2. Title	
	3. Source	□ Platform
		□ Pipeline
		□ FPSO
		□ Exploration drilling
		□ Well
		□ Other (please specify)
	4. Hydrocarbon type	
	5. Estimated volume	
	6. Has the discharge ceased?	
	7. Fire, explosion or collision?	
	8. Environment Plan(s)	
	9. Other details	
Actions taken to avoid or mitigate environmental impacts		
Corrective actions taken or proposed to stop, control or remedy the incident		
After the initial call is made to NOPSEMA, please send this record as soon as practicable to:		
NOPSEMA	[2]	
NOPTA	[3]	
DMPE	[4]	

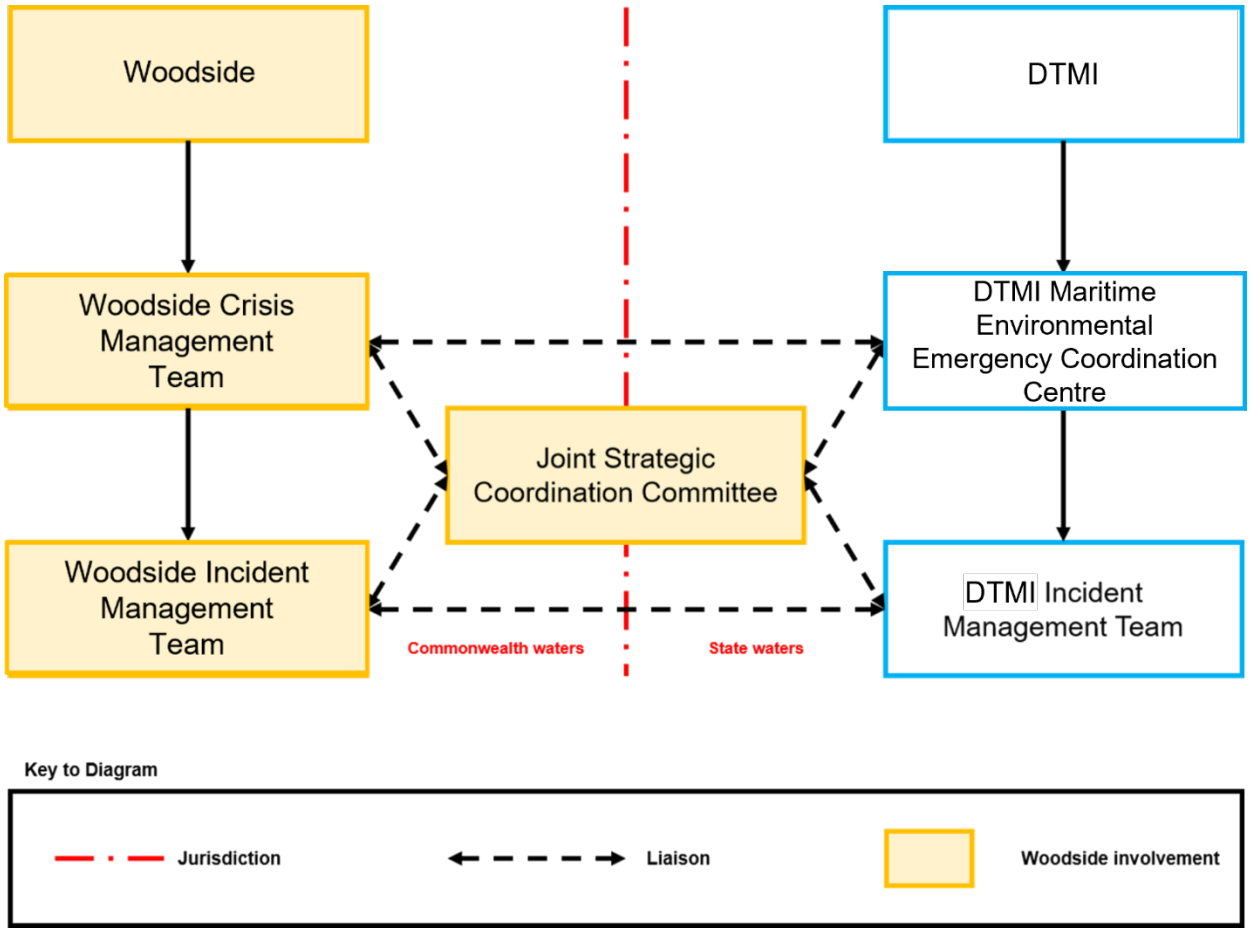
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APPENDIX C SPILL ASSESSMENT QUESTIONS

What has happened?			
Date/time			
Spill source			
Spill cause			
Safety situation			
What is it?			
Oil type and name			
Oil properties	Specific gravity		
	Viscosity		
	Pour point		
	Asphaltenes		
	Wax content		
	Boiling point		
Where is it?			
Latitude and longitude			
Distance and bearing			
Affected area	☐ Offshore	☐ Subsea	☐ Shoreline
	☐ Estuary	☐ Port	☐ Harbour
	☐ Inland	☐ River	☐ Other (please detail):
Water depth			
How big is it?			
Area			
Release type	☐ Instantaneous	Estimated volume:	
	☐ Continuous release	Estimated release rate:	
Where is it going?			
Metocean conditions			
Currents and tides			
What is in the way?			
Resources at risk			
Time until resource contact			
What is happening to it?			
Weathering processes			
Response actions underway			

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APPENDIX D COORDINATION STRUCTURE FOR A CONCURRENT HYDROCARBON SPILL IN BOTH COMMONWEALTH AND STATE WATERS/ SHORELINES[5]



The Control Agency for a hydrocarbon spill in Commonwealth waters resulting from an offshore petroleum activity is Woodside (the Petroleum Titleholder).

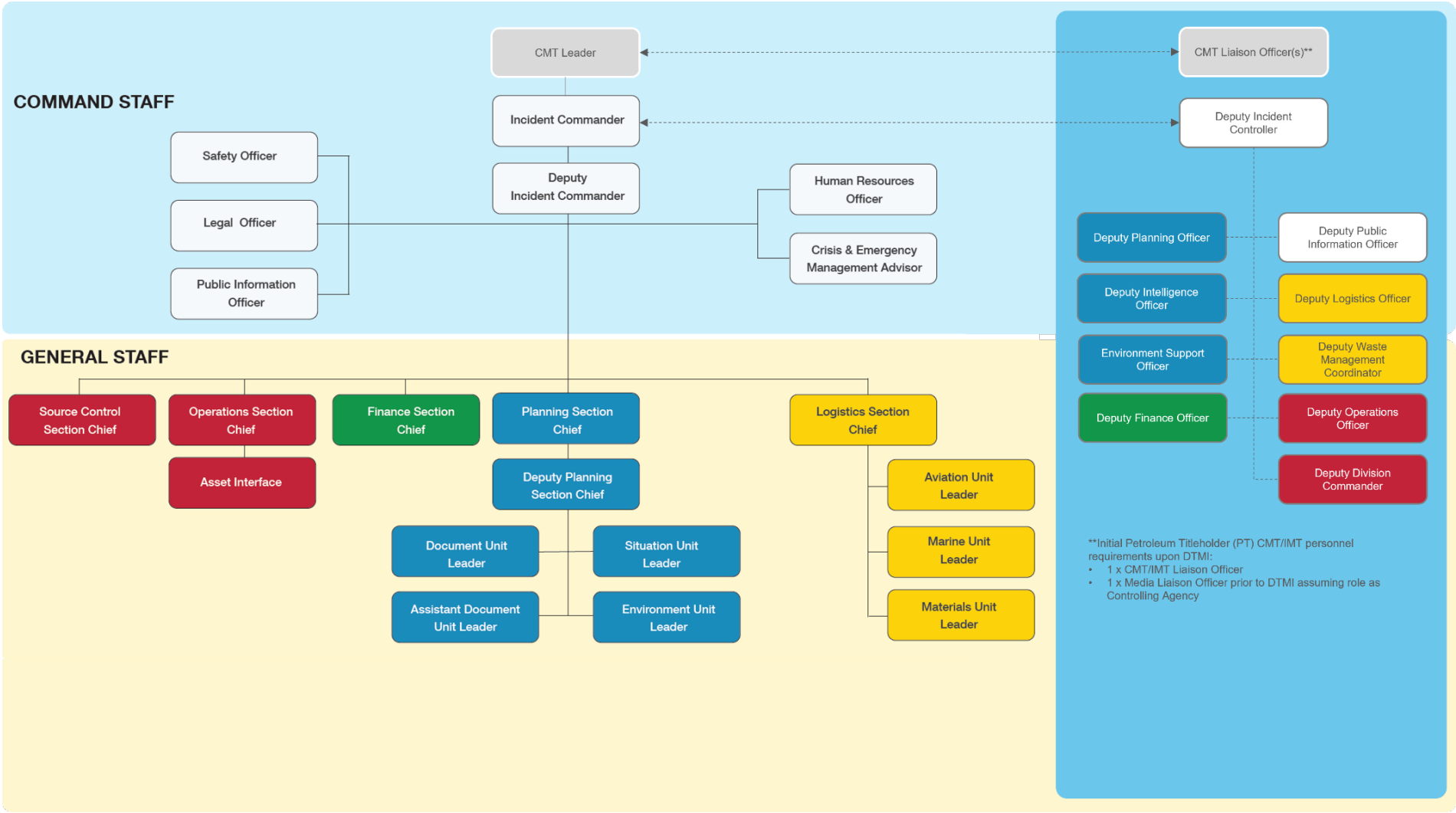
The Control Agency/ Hazard Management Agency (HMA) for a hydrocarbon spill in State waters/ shorelines resulting from an offshore petroleum activity is DTMI. DTMI will appoint an Incident Controller and form a separate IMT to only manage the spill within State waters/ shorelines.

[5] *Adapted from DTMI 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.*

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APPENDIX E WOODSIDE INCIDENT MANAGEMENT STRUCTURE

Woodside Incident Management Structure for hydrocarbon spill (including Woodside Liaison Officers command structure within DTMI 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 DTMI

In the event that DTMI is required to establish an IMT, Woodside will make available an appropriate number of appropriately qualified persons to work within the DTMI IMT.

It is an expectation that Woodside's nominated CMT Liaison Officer and the Deputy Incident Controller attend the DTMI 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 8:00am on the day following the request being formally made to Woodside by the SMPC. For Woodside personnel designated to serve in DTMI'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[6]	Key Duties	#
DTMI Maritime Environmental Emergency Coordination Centre (MEECC)	CMT Liaison Officer	CIMT Liaison	• Provide a direct liaison between the CMT and the MEECC. • Facilitate effective communications and coordination between the CIMT Leader and SMPC. • Offer advice to SMPC on matters pertaining to PT crisis management policies and procedures.	1
DTMI IMT Incident Control	Deputy Incident Controller	Deputy Incident Commander (Deputy IC)	• Provide a direct liaison between the PT IMT and DTMI IMT. • Facilitate effective communications and coordination between the PT IC and the DTMI IC. • Offer advice to the DTMI IC on matters pertaining to PT incident response policies and procedures. • Offer advice to the Safety Coordinator on matters pertaining to PT safety policies and procedures, particularly as they relate to PT employees or contractors operating under the control of the DTMI IMT.	1
DTMI IMT Intelligence	Deputy Intelligence Officer	Situation Unit Leader (Intelligence)	• As part of the Intelligence Team, assist the Intelligence Officer in the performance of their duties in relation to situation and awareness. • Facilitate the provision of relevant modelling and predications from the PT IMT. • Assist in the interpretation of modelling and predictions originating from the PT IMT. • Facilitate the provision of relevant situation and awareness information originating from the DTMI IMT to the PT IMT. • Facilitate the provision of relevant mapping from the PT IMT. • Assist in the interpretation of mapping originating from the PT IMT.	1

[6] *These positions would be mobilised, in consultation with DTMI, 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 [11]*

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Area	Role	Woodside personnel[6]	Key Duties	#
			• Facilitate the provision of relevant mapping originating from the DTMI IMT to the PT IMT.	
DTMI IMT Intelligence – Environment	Environment Support Officer	Deputy Environment Unit Leader	• As part of the Intelligence Team, assist the Environment Coordinator in the performance of their duties in relation to the provision of environmental support into the planning process. • Assist in the interpretation of the PT OPEP and relevant TRP plans. • Facilitate in requesting, obtaining and interpreting environmental monitoring data originating from the PT IMT. • Facilitate the provision of relevant environmental information and advice originating from the DTMI IMT to the PT IMT.	1
DTMI IMT Planning-Plans/ Resources	Deputy Planning Officer	Deputy Planning Section Chief	• As part of the Planning Team, assist the Planning Officer in the performance of their duties in relation to the interpretation of existing response plans and the development of incident action plans and related sub plans. • Facilitate the provision of relevant IAP and sub plans from the PT IMT. • Assist in the interpretation of the PT OPEP from the PT. • Assist in the interpretation of the PT IAP and sub plans from the PT IMT. • Facilitate the provision of relevant IAP and sub plans originating from the DTMI IMT to the PT IMT. • Assist in the interpretation of the PT existing resource plans. • Facilitate the provision of relevant components of the resource sub plan originating from the DTMI IMT to the PT IMT. **(Note this individual must have intimate knowledge of the relevant PT OPEP and planning processes)**	1
DTMI IMT Public Information-Media/ Community Engagement	Deputy Public Information Officer	Deputy Public Information Officer	• As part of the Public Information Team, provide a direct liaison between the PT Media team and DTMI IMT Media team. • Facilitate effective communications and coordination between the PT and DTMI media teams. • Assist in the release of joint media statements and conduct of joint media briefings. • Assist in the release of joint information and warnings through the DTMI Information and Warnings team. • Offer advice to the DTMI Media Coordinator on matters pertaining to PT media policies and procedures. • Facilitate effective communications and coordination between the PT and DTMI Community Liaison teams. • Assist in the conduct of joint community briefings and events.	1

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Area	Role	Woodside personnel[6]	Key Duties	#
			• Offer advice to the DTMI Community Liaison Coordinator on matters pertaining to the PT community liaison policies and procedures. • Facilitate the effective transfer of relevant information obtained from through the Contact Centre to the PT IMT.	
DTMI IMT Logistics	Deputy Logistic Officer	Deputy Logistics Section Chief	• As part of the Logistics Team, assist the Logistics Officer in the performance of their duties in relation to the provision of supplies to sustain the response effort. • Facilitate the acquisition of appropriate supplies through the PTs existing OSRL, AMOSC and private contract arrangements. • Collects Request Forms from DTMI to action via PT IMT. **(Note this individual must have intimate knowledge of the relevant PT logistics processes and contracts)**	1
DTMI IMT Finance-Accounts/ Financial Monitoring	Deputy Finance Officer	Deputy Finance Section Chief	• As part of the Finance Team, assist the Finance Officer in the performance of their duties in relation to the setting up and payment of accounts for those services acquired through the PTs existing OSRL, AMOSC and private contract arrangements. • Facilitate the communication of financial monitoring information to the PT to allow them to track the overall cost of the response. • Assist the Finance Officer in the tracking of financial commitments through the response, including the supply contracts commissioned directly by DTMI and to be charged back to the PT.	1
DTMI IMT Operations	Deputy Operations Officer	Deputy Operations Section Chief	• As part of the Operations Team, assist the Operations Officer in the performance of their duties in relation to the implementation and management of operational activities undertaken to resolve an incident. • Facilitate effective communications and coordination between the PT Operations Section and the DTMI Operations Section. • Offer advice to the DTMI Operations Officer on matters pertaining to PT incident response procedures and requirements. • Identify efficiencies and assist to resolve potential conflicts around resource allocation and simultaneous operations of PT and DTMI response efforts.	1
DTMI IMT Operations – Waste Management	Deputy Waste Management Coordinator	Deputy Waste Coordinator (Materials)	• As part of the Operations Team, assist the Waste Management Coordinator in the performance of their duties in relation to the provision of the management and disposal of waste collected in State waters. • Facilitate the disposal of waste through the PT's existing private contract arrangements related to waste management and in line with legislative and regulatory requirements. • Collects Request Forms from DTMI to action via PT IMT.	1

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Area	Role	Woodside personnel[6]	Key Duties	#
DTMI FOB Operations Command	Deputy Division Commander	FOB Deputy Incident Commander	• As part of the Field Operations Team, assist the Division Commander in the performance of their duties in relation to the oversight and coordination of field operational activities undertaken in line with the IMT Operations Section's direction. • Provide a direct liaison between the PT FOB and DTMI FOB. • Facilitate effective communications and coordination between the PT Division Commander and the DTMI Division Commander. • Offer advice to the DTMI Division Commander on matters pertaining to PT incident response policies and procedures. • Assist the Safety Coordinator deployed in the FOB in the performance of their duties, particularly as they relate to PT employees or contractors. • Offer advice to the Safety Coordinator deployed in the FOB on matters pertaining to PT safety policies and procedures.	1
			Total	**11**

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APPENDIX G DTMI LIAISON OFFICER RESOURCES TO WOODSIDE

Once DTMI activates a State waters/ shorelines IMT, DTMI will make available the following roles to Woodside.

Area	DTMI Liaison Role	Personnel Sourced from	Key Duties	#
Woodside CMT	DTMI Liaison Officer (prior to DTMI assuming Controlling Agency) / Deputy Incident Controller – State waters (after DTMI assumes Controlling Agency)	DTMI	• Facilitate effective communications between DTMI's SMPC/ Incident Controller and the Petroleum Titleholder's appointed CMT Leader / Incident Controller. • Provide enhanced situational awareness to DTMI of the incident and the potential impact on State waters. • Assist in the provision of support from DTMI to the Petroleum Titleholder. • Facilitate the provision technical advice from DTMI to the Petroleum Titleholder Incident Controller as required.	1
Woodside CIMT Public Information – Media	DTMI Media Liaison Officer	DTMI	• Provide a direct liaison between the PT Media team and DTMI IMT Media team. • Facilitate effective communications and coordination between the PT and DTMI media teams. • Assist in the release of joint media statements and conduct of joint media briefings. • Assist in the release of joint information and warnings through the DTMI Information & Warnings team. • Offer advice to the PT Media Coordinator on matters pertaining to DTMI and wider Government media policies and procedures.	1
			Total DTMI personnel initial requirement to Woodside	**2**

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APPENDIX I DEPARTMENT OF PLANNING LAND, HERITAGE AND ABORIGINAL ENQUIRY SYSTEM RESULTS

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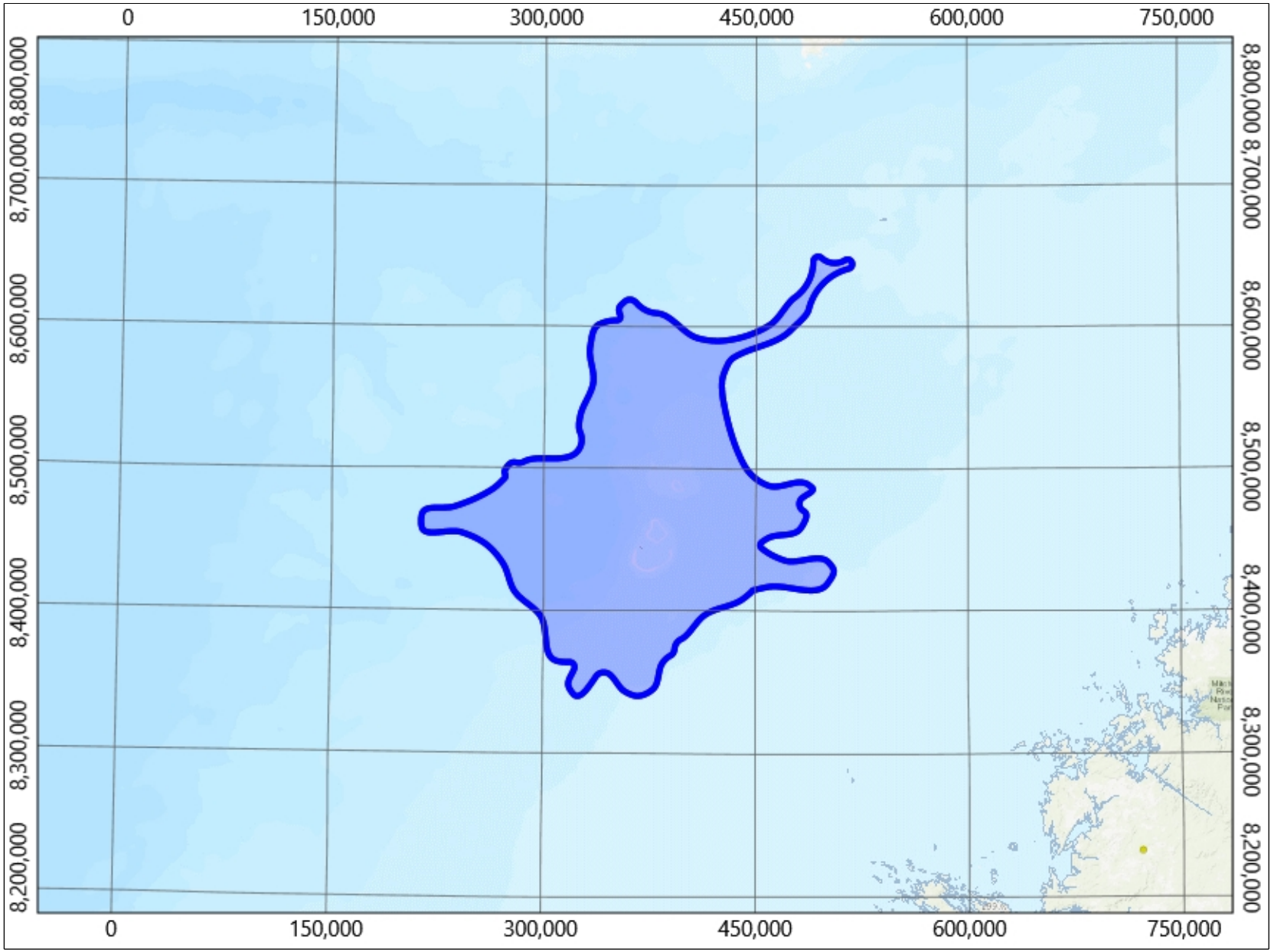
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Map of Aboriginal Cultural Heritage (ACH) Register

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Legend

- Aboriginal Cultural Heritage (ACH) Register
- Search Area
- Aboriginal Community
  - *Permanent*
  - *Seasonal*
  - *Town Based*
- Town
- Road
- River
- Local Government Authority

138.89 kilometres

Map Scale 1 : 4,210,000

MGA Zone 51 (GDA2020)

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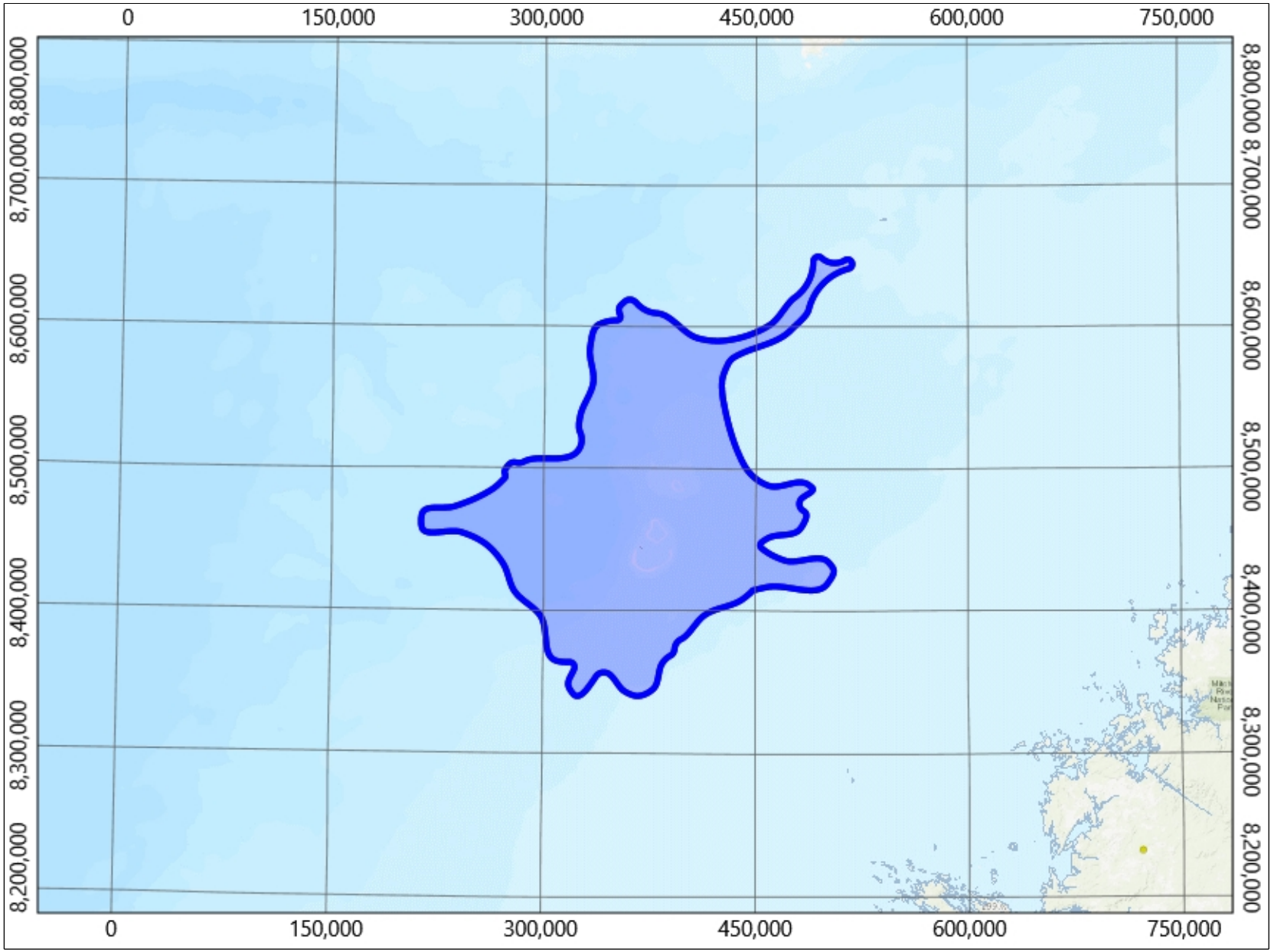
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- Road
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138.89 kilometres

Map Scale 1 : 4,210,000

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APPENDIX J OPERATIONAL AND SCIENTIFIC MONITORING BRIDGING IMPLEMENTATION PLAN

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Woodside Energy

Oil Spill Preparedness and Response Mitigation Assessment for Browse to NWS Project Geophysical and Geotechnical Surveys Environment Plan (Commonwealth)

Corporate HSE

Hydrocarbon Spill Preparedness

September 2026

Revision 0

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EXECUTIVE SUMMARY

Woodside Energy Ltd (Woodside), as Operator of the Browse development, has developed its oil spill preparedness and response position for the Browse Geophysical and Geotechnical (GPGT) Surveys - Commonwealth activities (the 'Petroleum Activity').

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 an acceptable level. It achieves this by evaluating response options to address the potential environmental impacts resulting from an unplanned loss of hydrocarbon containment associated with the Petroleum Activity described in the Environment Plan (EP). This document 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	Credible Scenario-01 (CS-01): Vessel collision at Operational Area A. 14°1'24.07"S, 121°54'40.46"E. Instantaneous surface release of 200 m^3 of Marine Gas Oil (MGO). 5% residual component of 10 m^3.			Section 2.2
	Credible Scenario-02 (CS-02): Vessel collision at Operational Area B. 14°23′45.39"S, 121°41'48.81"E. Instantaneous surface release of 200 m^3 of Marine Gas Oil (MGO). 5% residual component of 10 m^3.			
Hydrocarbon Properties	MGO is a mixture of volatile and persistent hydrocarbons with low proportions of highly volatile and residual components. Evaporation rates will increase with temperature, but in general about 40% should evaporate within the first 24 hours (BP < 265 °C). Evaporation then slows, with ~5% of the remaining mass lost over the following six days. Only a small fraction (~2%) is degraded by microbial and photochemical processes during the first week. The low viscosity of MGO fuels require relatively low wave energy to break up floating slicks and suspend MGO as droplets mixed into the wave-affected layer of the ocean surface. These suspended droplets will be buoyant but will remain in suspension when there is sufficient wave energy. Waves generated by wind speeds as low as 6–7 knots on the open ocean will start to suspend films of floating MGO. Entrainment rates will increase significantly as sea conditions become more energetic. One effect of suspension will be reduction of the evaporation rates of the component hydrocarbons.			Section 6.9.1 of the EP Appendix A of the First Strike Plan
Modelling Results	Stochastic modelling A quantitative, stochastic assessment has been undertaken for credible spill scenarios to help assess the environmental risk of a hydrocarbon spill. A total of 200 replicate simulations were completed for the scenarios to test for trends and variations in the trajectory and weathering of the spilled oil, with an even number of replicates completed using samples of metocean data that commenced within each calendar quarter (50 simulations per quarter).			Section 2.3
		CS-01: Instantaneous hydrocarbon release of 200 m^3 MGO caused by vessel collision in Operational Area A (WCCS)	CS-02: Instantaneous hydrocarbon release of 200 m^3 MGO caused by vessel collision in Operational Area B	

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	Minimum time to floating hydrocarbon contact with the offshore edge(s) of any shoreline receptor polygon (at a concentration of 10 g/m^2)	1 hour – Scott Reef North and Scott Reef South	15 hours – Scott Reef South	
	Minimum time to commencement of hydrocarbon accumulation at any shoreline receptor (at a concentration of 100 g/m^2)	10 hours – Scott Reef South (including Sandy Islet)	54 hours – Scott Reef South (including Sandy Islet)	
	Maximum accumulated hydrocarbon volume at any individual shoreline receptor (averaged over all replicate simulations)	2 m^3 – Scott Reef South (including Sandy Islet)	<1 m^3 – Scott Reef South (including Sandy Islet)	
	Maximum accumulated hydrocarbon volume at any individual shoreline receptor (worst case replicate simulation)	80 m^3 – Scott Reef South (including Sandy Islet)	11 m^3 – Ashmore Reef	
	Maximum cumulative hydrocarbon volume accumulated across all shoreline receptors contacted by accumulated hydrocarbons	80 m^3 – Scott Reef South (including Sandy Islet) (only one receptor predicted to be contacted)	11 m^3 – Ashmore Reef	
	Minimum time to dissolved hydrocarbon contact with the offshore edges of any receptor polygon (at a exposure value of 10 ppb)	1 hour – Scott Reef North	10 hours – Scott Reef South	
Net Environmental Benefit Analysis	Monitor and evaluate, source control, shoreline clean-up, oiled wildlife response, are all identified as potentially having a net environmental benefit (dependent on the actual spill scenario) and carried forward for further assessment.			Section 4
ALARP evaluation of selected response techniques	The evaluation of the selected response techniques shows the proposed controls reduced the risk to an ALARP and acceptable level for the risk presented in Section 2, without the implementation of considered additional, alternative or improved control measures.			Section 6

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1 INTRODUCTION

1.1 Overview

Woodside Energy Ltd (Woodside), as Operator of the Browse development, has developed its oil spill preparedness and response position for the Browse Geophysical and Geotechnical Surveys – Commonwealth activities, hereafter known as the Petroleum Activity. 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.

- The Browse to NWS Project Geophysical and Geotechnical Surveys Environment Plan (Commonwealth) Environment Plan (EP)
- Hydrocarbon Spill Australia Regulatory Framework[1]
- The Browse to NWS Project Geophysical and Geotechnical Surveys (Commonwealth) 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.

1.3 Scope

This document demonstrates that the risks and impacts from an unplanned hydrocarbon release, and the associated response operations, are controlled to ALARP and an acceptable level. 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 Petroleum Activity described in the EP. This document then outlines Woodside's decisions and techniques for responding to a hydrocarbon release event and the process for determining its level of hydrocarbon spill preparedness. It should be read in conjunction with the documents listed in Table 1-1. The location of the Petroleum Activity is shown in Figure 3-1 of the EP.

1.4 Oil spill response document overview

The documents outlined in Table 1-1 and Figure 1-1 are collectively used to manage the preparedness and response for a hydrocarbon release.

The Oil Pollution First Strike Plan (FSP) contains a pre-operational Net Environmental Benefit Analysis (NEBA) summary, outlining the selected response techniques for this Petroleum Activity. 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 monitor and evaluate and operational monitoring activities and the operational NEBA (Section 4). Planning, coordination and resource management are initiated by the Corporate Incident

1 In accordance with Regulation 56 of the Environmental Regulations, references to the Hydrocarbon Spill Australia Regulatory Framework within this document refer to the version submitted with accepted North West Shelf Phase 1 Plug and Abandonment and TPA03 Well Intervention Environment Plan, which is available on NOPSEMA's website at: https://docs.nopsema.gov.au/A1282743

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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 to confirm 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.

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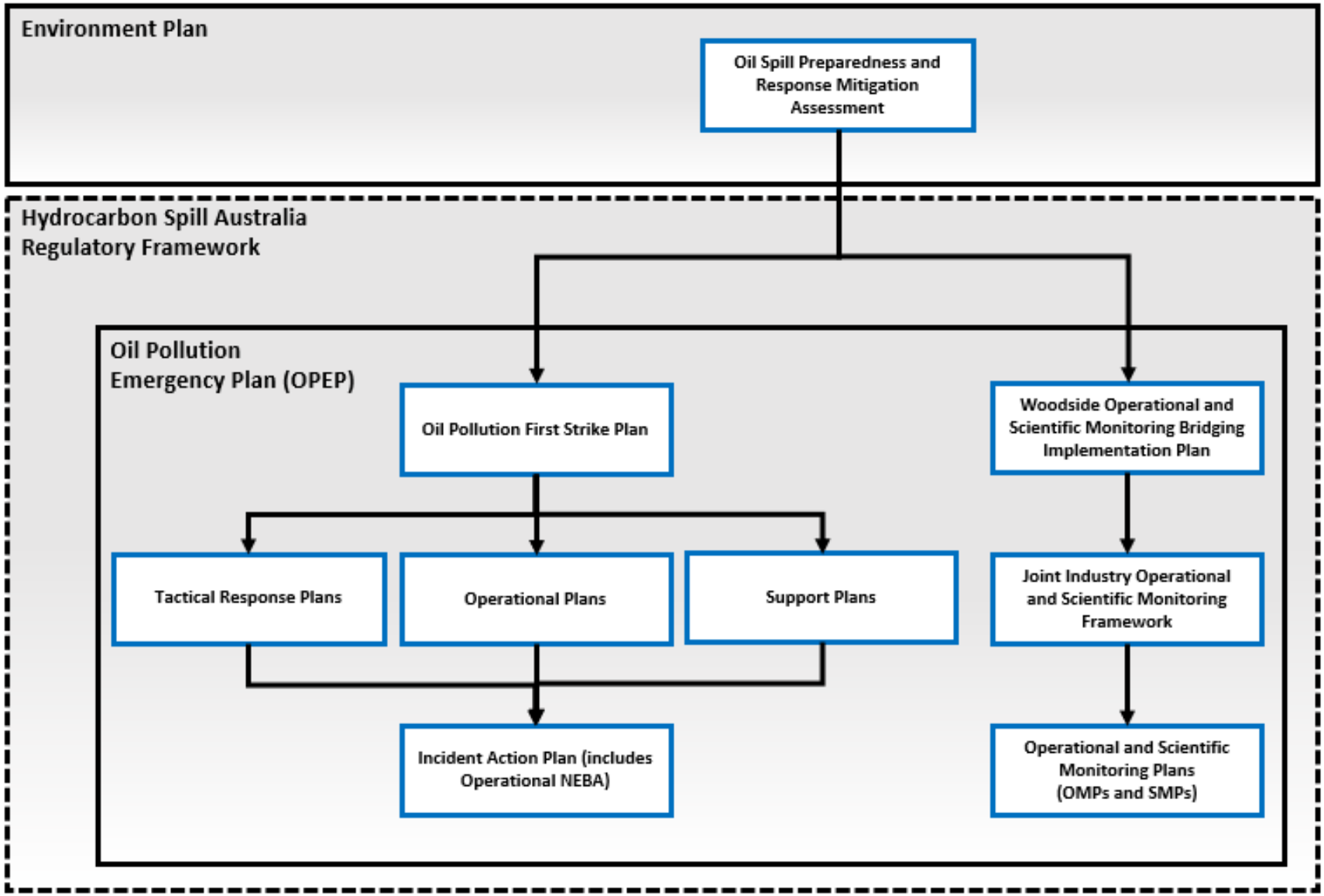


Figure 1-1: Woodside hydrocarbon spill document structure

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Table 1-1: Hydrocarbon Spill preparedness and response – document references

Document	Document overview	Stakeholders	Relevant information	Document subsections (if applicable)
Browse Geophysical and Geotechnical Surveys – Commonwealth – Environment Plan (EP)	Demonstrates that potential adverse impacts on the environment associated with the Petroleum Activity (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.	National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) Woodside internal	EP Section 6 (Identification and evaluation of environmental risks and impacts, including credible spill scenarios) EP Section 6 (Performance outcomes, standards and measurement criteria) EP Section 7 (Implementation strategy – including emergency preparedness and response, and Reporting and compliance)	
Hydrocarbon Spill Australia Regulatory Framework[1]	Describes the arrangements and processes adopted by Woodside when responding to a hydrocarbon spill from a petroleum activity.	Regulatory agencies Woodside internal	All	
Oil Spill Preparedness and Response Mitigation Assessment for the Browse Geophysical and Geotechnical Surveys – Commonwealth (this document)	Evaluates response options to address the potential environmental impacts resulting from an unplanned loss of hydrocarbon containment associated with the Petroleum Activity described in the EP.	Regulatory agencies Corporate Incident Management Team (CIMT): Control function in an ongoing spill response for activity-specific response information.	All Performance outcomes, standards and measurement criteria related to hydrocarbon spill preparedness and response are included in this document.	
Browse Geophysical and Geotechnical Surveys – Commonwealth Oil Pollution First Strike Plan	Facility specific document providing details and tasks required to mobilise a first strike response. Primarily applied to the first 24 hours of a response until a full Incident Action Plan (IAP) specific to the event is developed. Oil Pollution First Strike Plans are intended to be the first document used to provide	Site-based IMT for initial response, activation and notification. CIMT for initial response, activation and notification. CIMT: 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	

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Document	Document overview	Stakeholders	Relevant information	Document subsections (if applicable)
	immediate guidance to the responding Incident Management Team (IMT).		trajectory modelling, aerial surveillance and oil spill tracking buoy details.	
Operational Plans	Lists the actions required to activate, mobilise and deploy personnel and resources to commence response operations. 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. 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.	CIMT: Operations and Logistics Sections for first strike activities. CIMT: Planning Section to help inform the IAP on resources available.	Locations from where resources may be mobilised. How resources will be mobilised. Details of where resources may be mobilised to and what facilities are required once the resources arrive. Details on how to implement resources to undertake a response.	Operational Monitoring Operational Plan Shoreline clean-up Oiled wildlife response
Operational and Scientific Monitoring (OSM) Bridging Implementation Plan	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 is aligned to the Joint Industry Operational and Scientific Monitoring Framework (Australian Petroleum Production & Exploration Association [APPEA] 2021) and describes how this Framework applies to Woodside's activities and spill risks in Australian waters.	Site-based IMT for initial activation and notification. OSM Service Providers Regulatory agencies	Mobilisation and notification process for OSM, including activation of OSM Service Providers Information on initial scientific monitoring priorities OSM arrangements and capability Permitting and access requirements for OSM	

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Document	Document overview	Stakeholders	Relevant information	Document subsections (if applicable)
Tactical Response Plans	Provides options for response techniques in selected response protection areas (RPAs). Provides site, access and deployment information to support a response at the location.	CIMT: Planning Section to help develop IAPs, and Logistics Section to assist with determining resources required.	Indicative response techniques. Access requirements and/or permissions. Relevant information for undertaking a response at that site. Where applicable, may include equipment deployment locations and site layouts.	For full list of relevant Tactical Plans for the Petroleum Activity, refer to ANNEX D: Tactical Response Plans.
Support Plans	Support Plans detail Woodside's approach to resourcing and the provision of services during a hydrocarbon spill response.	CIMT: Operations, Logistics and Planning Sections.	Technique for mobilising and managing additional resources outside of Woodside's immediate preparedness arrangements.	Logistics Support Plan Aviation Support Plan Marine Support Plan Waste Management Plan – Australia Health and Safety Support Plan Hydrocarbon Spill Responder Health Monitoring Guidelines People and Global Capability (Surge Labour Requirements) Support Plan Stakeholder Engagement Support Plan Guidance for Hydrocarbon Spill Claims Management

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2 RESPONSE PLANNING PROCESS

This document details Woodside's process for identifying potential response options for the hydrocarbon release scenarios, identified in the EP. Figure 2-1 outlines the interaction between Woodside's response, planning, preparedness and selection process.

This structure has been used because it shows how the planning and preparedness activities inform a response and provides indicative guidance on what activities would be undertaken, in sequential order, if a real event were to occur. The process also evaluates alternative, additional and/or improved control measures specific to the Petroleum Activity.

The Browse to NWS Project Geophysical and Geotechnical Surveys (Commonwealth) Oil Pollution First Strike Plan (FSP) 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.

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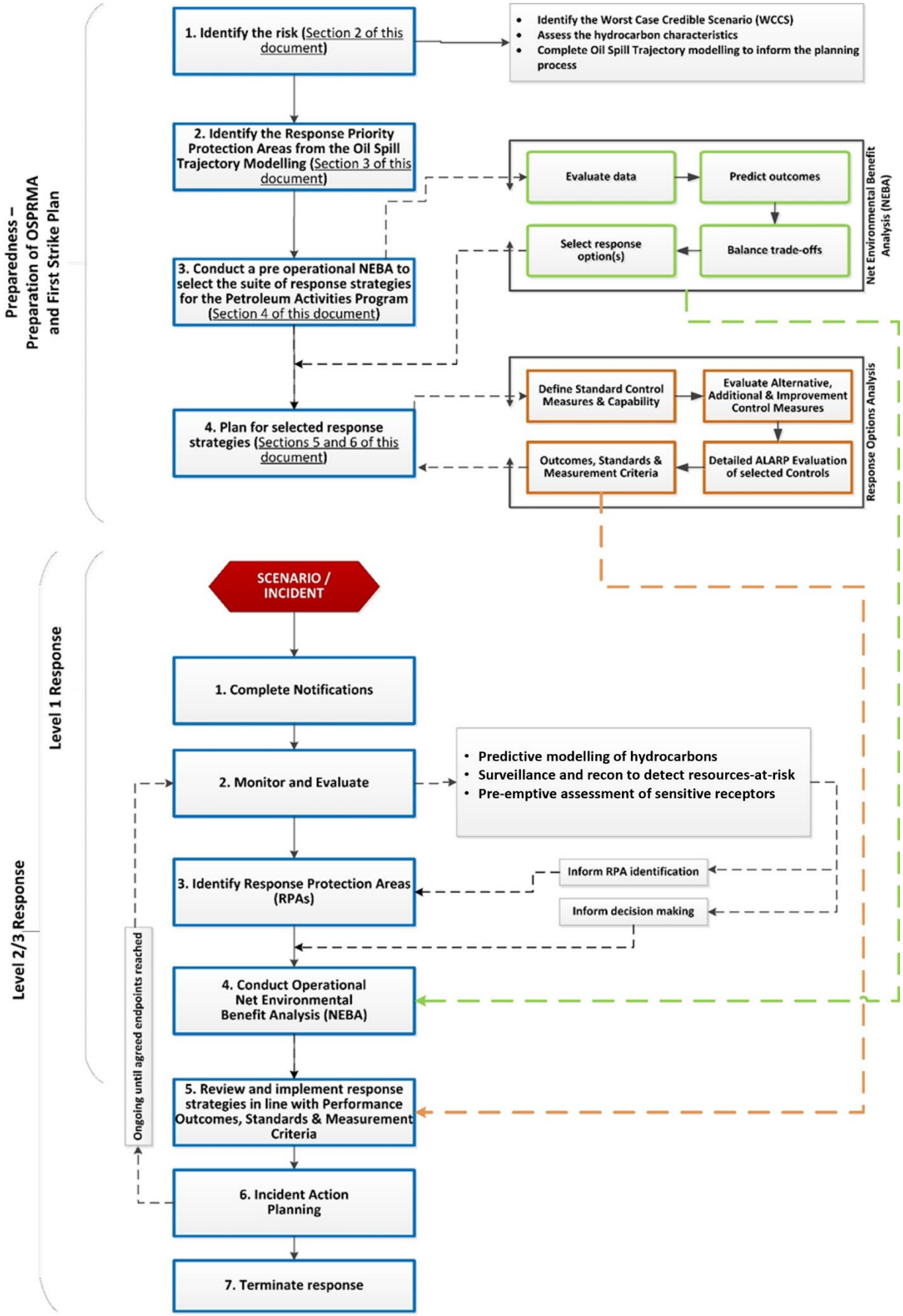


Figure 2-1: Response planning and selection process

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2.1 Response planning process outline

This document is expanded below to provide additional context on the key steps in determining capability, evaluating ALARP and hydrocarbon spill response requirements.

- Section 1: Introduction
- Section 2: Response planning process
  - identification of worst-case credible scenario(s) (WCCS)
  - spill modelling for WCCS.
- Section 3: Identify response protection areas (RPAs)
  - areas predicted to be contacted at concentration >100 g/m^2.
- Section 4: Net environmental benefit analysis (NEBA)
  - pre-operational NEBA (during planning/ALARP evaluation): this must be reviewed during the initial response to an incident to confirm its accuracy
  - selected response techniques prioritised and carried forward for ALARP assessment.
- Section 5: Hydrocarbon spill ALARP process
  - determines the response need based on predicted consequence parameters.
  - details the environmental performance of the selected response options based on need.
  - sets the environmental performance outcomes, environmental performance standards and measurement criteria.
- Section 6: ALARP evaluation
  - evaluates alternative, additional, and improved options for each response technique to demonstrate the risk has been reduced to ALARP.
  - provides a detailed ALARP assessment of selected control measure options against:
    - predicted cost associated with implementing the option
    - predicted change to environmental benefit
    - predicted effectiveness / feasibility of the control measure.
- Section 7: Environmental risk assessment of selected response techniques
  - evaluation of impacts and risks from implementing selected response options.
- Section 8: ALARP conclusion
- Section 9: Acceptability conclusion

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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.

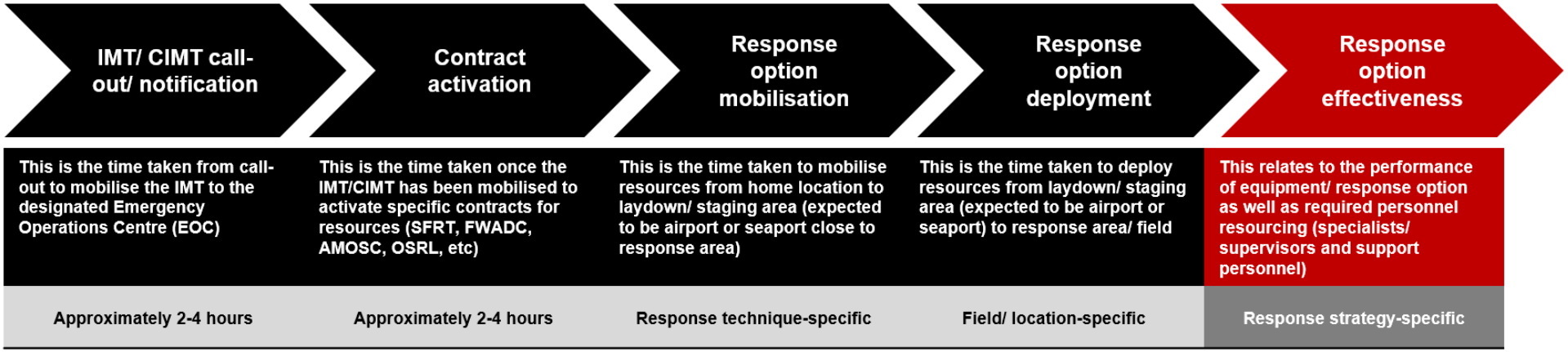


Figure 2-2: Response planning assumption – timing, resourcing and effectiveness

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2.2 Environment plan risk assessment (credible spill scenarios)

Potential hydrocarbon release scenarios from the Petroleum Activity have been identified during the risk assessment process (Section 6.9 of the EP). Further descriptions of risk, impacts and mitigation measures (which are not related to hydrocarbon preparedness and response) are provided in Section 6 of the EP. Two unplanned events or credible spill scenarios for the Petroleum Activity have been selected as representative across types, sources and incident/response levels, up to and including the WCCS.

Table 2-1 presents the credible scenarios for the Petroleum Activity. The WCCS for the activity is then used for response planning purposes, as all other scenarios are of a lesser scale and extent. By demonstrating capability to manage the response to the WCCS, Woodside assumes other scenarios that are smaller in nature and scale can also be managed by the same capability. Response performance measures have been defined based on a response to the WCCS.

Two oil spill modelling scenarios were run at different locations within the operational area (RPS 2026). The location of CS-01 was selected as the worst-case location for the Petroleum Activity due to its proximity to Scott Reef. The location of CS-01 and CS-02 are shown in Figure 2-3.

The selection of WCCS for OSM planning purposes is discussed in ANNEX C: Petroleum Activity OSM Activity Specific Requirement and Verification of OSM-BIP Adequacy.

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Table 2-1: Petroleum Activities Program credible spill scenarios

Credible Spill Scenarios	Scenario selected for planning purposes	Scenario description	Maximum credible volume released (liquid m^3)1	Incident level	Hydrocarbon type	Residual proportion	Residual volume (m^3)
Credible Spill Scenario-01 (CS-01) (WCCS)	Yes	Hydrocarbon release caused by vessel collision at location A	200	2	MGO	5%	10
Credible Spill Scenario-02 (CS-02)	No	Hydrocarbon release caused by vessel collision at location B	200	2	MGO	5%	10

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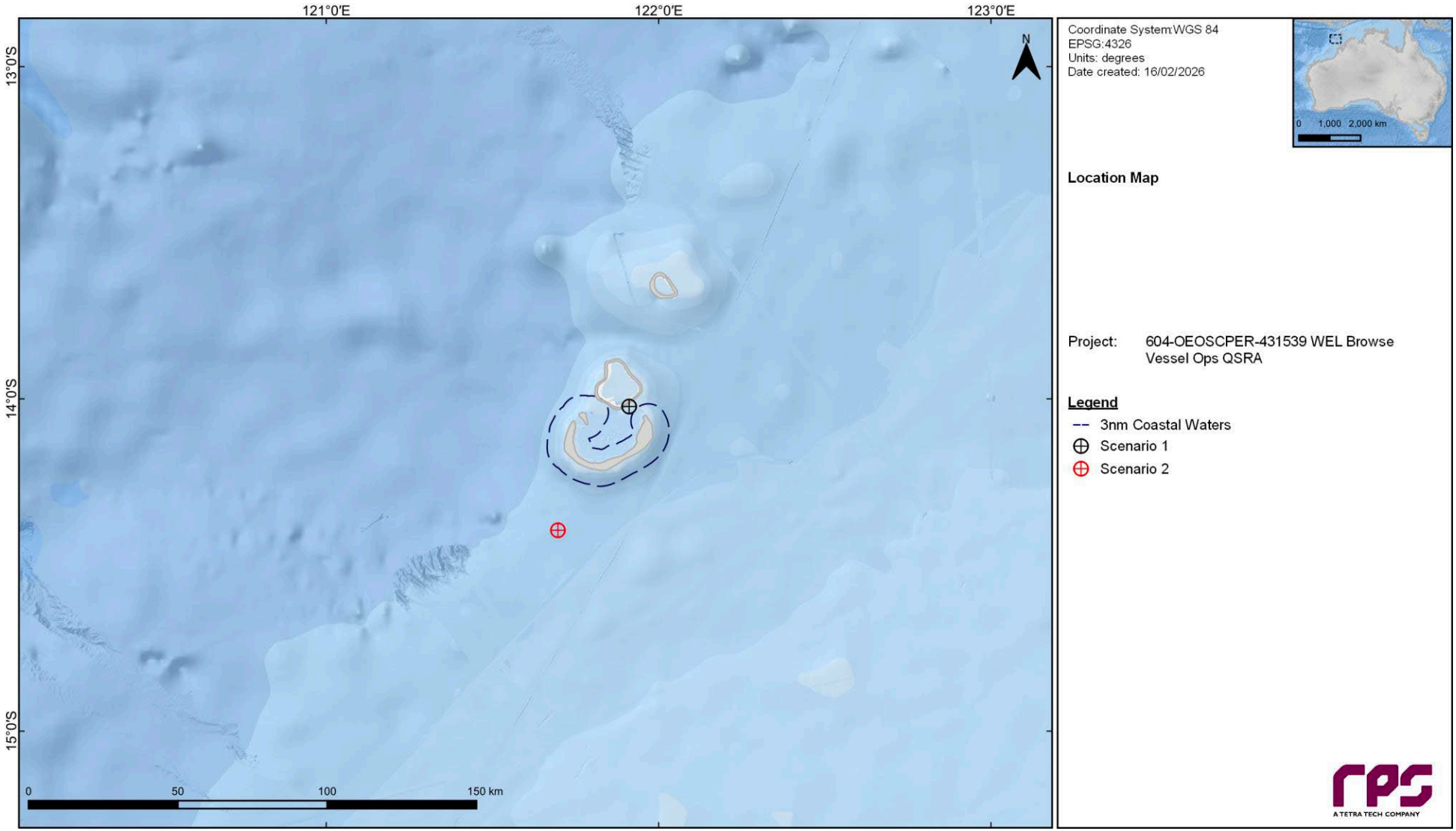


Figure 2-3: Location of CS-01 (Scenario 1) and CS-02 (Scenario 2)

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2.2.1 Hydrocarbon characteristics

Hydrocarbon characteristics, including modelled weathering data and ecotoxicity, are included in Section 6.9.1.2 of the EP.

Marine Gas Oil

Marine Gas Oil (MGO) is typically classed as an International Tanker Owners Pollution Federation (ITOPF) Group I/II oil. Group I oils are non-persistent and tend to dissipate completely through evaporation within a few hours and do not normally form emulsions.

MGO is a mixture of volatile and persistent hydrocarbons with low proportions of highly volatile and residual components. In general, about 6% of the oil mass should evaporate within the first 12 hours (BP < 180 °C); a further 35% should evaporate within the first 24 hours (180 °C < BP < 265 °C); and a further 54% should evaporate over several days (265 °C < BP < 380 °C). Approximately 5% of the oil is shown to be persistent. The aromatic content of the oil is approximately 3%.

If released in the marine environment and in contact with the atmosphere (i.e., surface spill), approximately 41% by mass of this oil is predicted to evaporate over the first couple of days depending upon the prevailing conditions, with further evaporation slowing over time. The heavier (low volatility) components of the oil tend to entrain into the upper water column due to wind-generated waves but can subsequently resurface if wind-waves abate. Therefore, the heavier components of this oil can remain entrained or on the sea surface for an extended period, with associated potential for dissolution of the soluble aromatic fraction.

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

Quantitative, stochastic assessments have been undertaken for the credible spill scenarios (refer to Table 2-1) to help assess the environmental consequences of a hydrocarbon spill.

A total of 200 replicate simulations were completed for each of the scenarios to test for trends and variations in the trajectory and weathering of the spilled oil, with an even number of replicates completed using samples of metocean data that commenced within each calendar quarter (50 simulations per quarter). Further details relating to the assessments for the scenarios can be found in Section 6 of the EP.

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2.3.1.1 Environmental impact thresholds – Environment that May Be Affected (EMBA) and hydrocarbon exposure

The outputs of the stochastic spill modelling are used to assess the potential environmental impact from the credible scenarios. The stochastic modelling results are used to delineate areas of the marine and shoreline environment that could be exposed to hydrocarbon levels exceeding environmental impact threshold concentrations. The summary of all the locations where hydrocarbon thresholds could be exceeded by any of the simulations modelled is defined as the EMBA and is discussed further in Section 6 of the EP. As the weathering of different fates of hydrocarbons (surface, entrained and dissolved) differs due to the influence of the metocean mechanism of transportation, a different EMBA is presented for each fate within the EP.

A conservative approach – adopting accepted accumulation thresholds for impacts on the marine environment – is used to define the EMBA. These hydrocarbon thresholds are presented in Table 2-2 below and described in Section 6 of the EP.

Table 2-2: Summary of thresholds applied to the stochastic hydrocarbon spill modelling to determine the EMBA and environmental impacts

Hydrocarbon	Surface hydrocarbon (g/m^2)	Dissolved hydrocarbon (ppb)	Entrained hydrocarbon (ppb)	Accumulated hydrocarbon (g/m^2)
EMBA				
Diesel	10	10	1,000	100
Operational and scientific monitoring (OSM) assessment (see ANNEX C: Petroleum Activity OSM Activity Specific Requirement and Verification of OSM-BIP Adequacy)				
All hydrocarbon types	1	10	10	10

2.3.2 Deterministic modelling

Response planning

Woodside uses deterministic modelling to evaluate risks and impacts and response capability requirements. For planning and scaling the clean-up element of the response, deterministic modelling is undertaken where initial stochastic modelling has indicated that hydrocarbons are present at the minimum feasible clean-up exposure values of ≥50 g/m^2 for floating hydrocarbons, and/or ≥100 g/m^2 for shoreline accumulations and where such shoreline contact is predicted at multiple locations. The deterministic modelling outputs are then used to scale the required capability for the offshore (surface dispersant and containment and recovery) and/or shoreline responses.

Stochastic modelling for CS-01 predicted shoreline contact was localised to one receptor location (Scott Reef South [including Sandy Islet]) above the 100 g/m^2 shoreline response exposure value. Similarly, modelling predicted floating hydrocarbons exceeding the exposure value of 50 g/m^2 to also be localised around Scott Reef North and South. Deterministic modelling is therefore not required and stochastic modelling has thus been used to scale the clean-up response within this assessment.

Operational and scientific monitoring

Deterministic modelling may also be used for planning Operational and Scientific Monitoring (OSM) activities. This is undertaken where stochastic modelling predicts that the existing response capability, required to resource monitoring at receptors forecast to be contacted by floating, shoreline and/or dissolved hydrocarbons (at ≥10% probability and within the initial 14 days), has been exceeded. For this Petroleum Activity, stochastic modelling does not predict that existing capability would be exceeded and therefore deterministic modelling for OSM planning is not required. Therefore, stochastic modelling has been used to plan the OSM activities as detailed in ANNEX C: Petroleum Activity OSM Activity Specific Requirement and Verification of OSM-BIP Adequacy.

Woodside is committed to a realistic, scalable response capability commensurate to the level of risk and able to be practically implemented and feasibly sustained.

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2.3.3 Response planning thresholds for surface and shoreline hydrocarbon exposure

Exposure values to determine the EMBA and inform OSM are used to predict and assess environmental impacts, however they do not appropriately represent the exposure values at which an effective response can be implemented.

Additional response exposure values are used for response planning and to determine areas where response techniques would be most effective. These exposure values are provided as a guide for response planning based on case studies that have demonstrated some response strategies (e.g. containment and recovery, chemical dispersant application) require certain oil spill thicknesses and conditions to be effective.

Response planning exposure values assist with understanding worst-case spill scenario response strategy capability requirements when used in conjunction with oil spill trajectory modelling results. Modelling informs the predicted spatial extent of the spill at certain response exposure values, which in turn can inform response strategy capability.

2.3.3.1 Surface hydrocarbon concentrations

Table 2-3: Surface hydrocarbon exposure values for response planning

Surface hydrocarbon exposure value (g/m^2)	Description	Bonn Agreement Oil Appearance Code	Mass per area (m^3/km^2)
>10	Predicted minimum exposure value for commencing monitor and evaluate[2]	Code 3 – Dull metallic colours	5–50
50	Predicted minimum floating oil exposure value for containment and recovery and surface dispersant application [3]	Code 4 – Discontinuous true oil colour	50–200
100	Predicted optimum floating oil exposure value for containment and recovery and surface dispersant application	Code 5 – Continuous true oil colour	>200
Shoreline hydrocarbon exposure value (g/m^2)	**Description**	**National Plan Guidance on Oil Contaminated Foreshores**	**Mass per area (m^3/km^2)**
100	Predicted minimum shoreline accumulation exposure value for shoreline assessment operations	Stain	>100
250	Predicted minimum exposure value for commencing shoreline clean-up operations	Level 3 – Thin Coating	200–1,000

The surface thickness of oil at which dispersants are typically effective is approximately 100 g/m^2. 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^2 ITOPF 2011). Additionally, the recommended rate of application for surface dispersant is typically one 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).

[2] Monitor and evaluate will be undertaken from the outset of a spill whether or not this exposure value 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 and Major Infrastructure (WA DTMI) or AMSA.

[3] At 50 g/m^2, containment and recovery and surface dispersant application operations are not expected to be particularly effective. This exposure value represents a conservative approach to planning response capability and containing the spread of surface oil.

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Guidance from the Australian Maritime Safety Authority (AMSA, 2020) 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.

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 the National Oceanic and Atmospheric Administration (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, 2014a, 2014b).

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 exposure values for effective response.

From this information and other relevant sources (Allen and Dale 1996, EMSA 2012, Spence 2018) the surface exposure value of 50 g/m^2 was chosen as an average/equilibrium thickness for offshore response operations (50 g/m^2 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).

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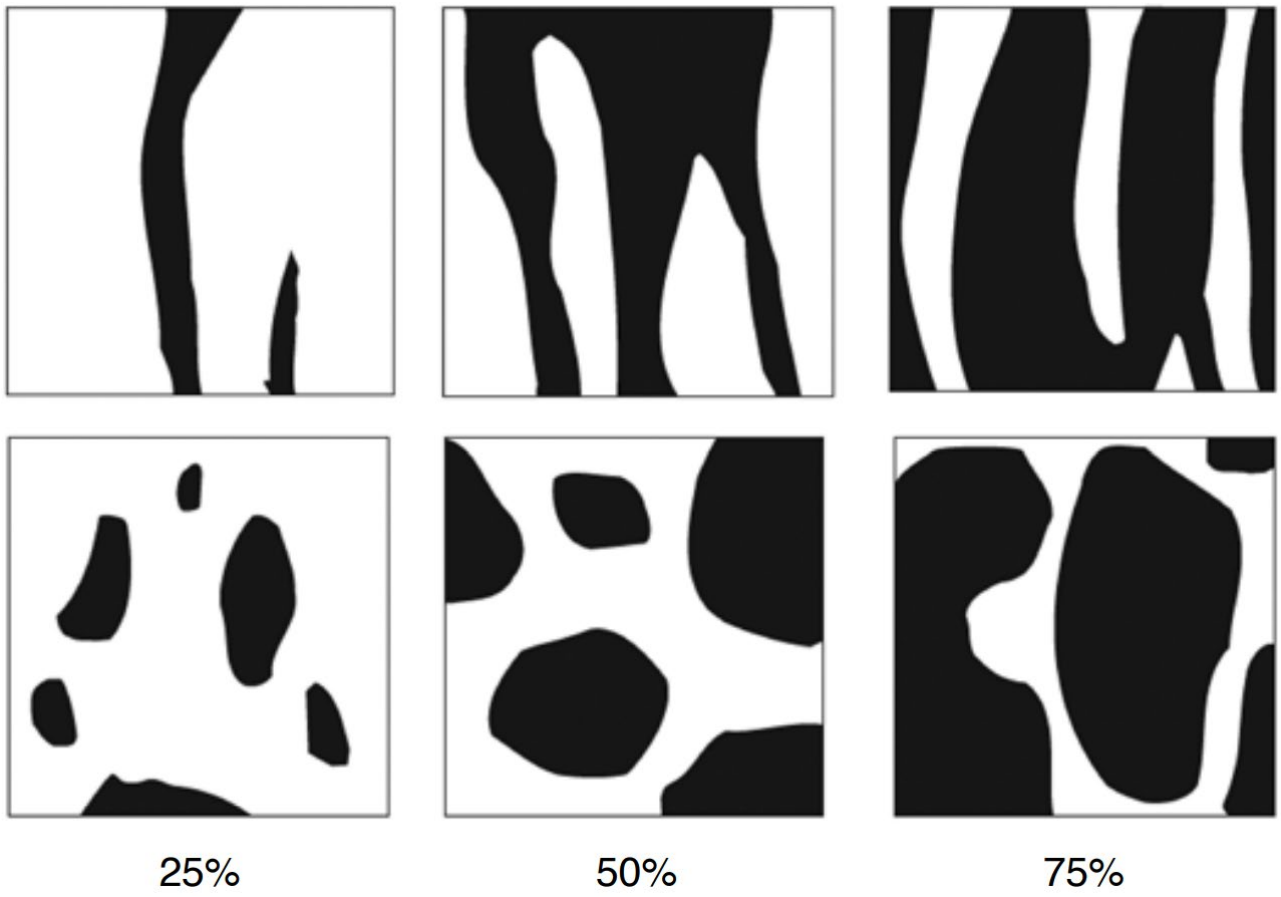


Figure 2-4: Proportion of total area coverage (AMSA, 2014)

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.

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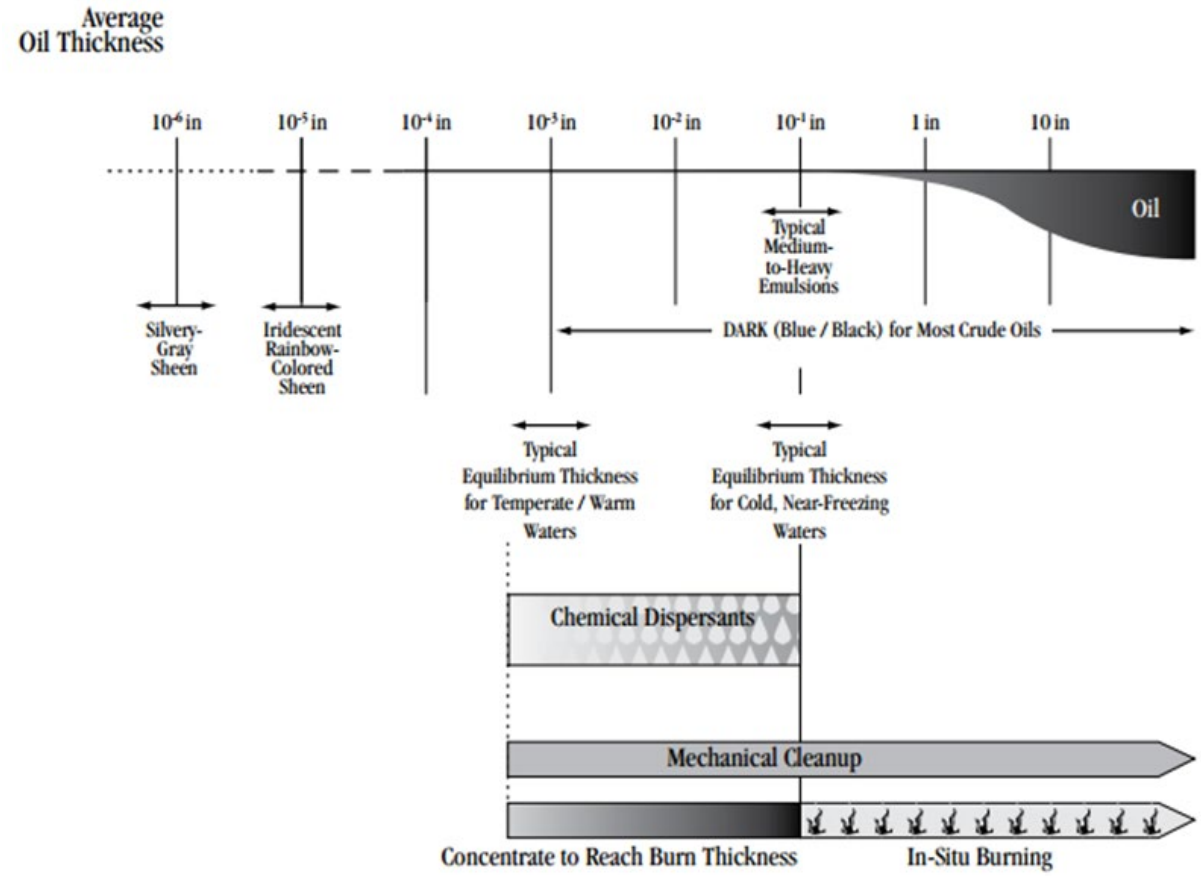


Figure 2-5: Oil thickness versus potential response options (from Allen & Dale 1996)

Wind and wave influence on the feasibility of response operations are also considered below (adapted from NOAA 2013):

- Mechanical Clean-up: Effectiveness drops significantly because of entrainment and/or splash-over as short period waves develop beyond 2–3 ft. (0.6–0.9m) in height. The ability to contain and recover oil decreases rapidly as the slick thickness becomes less than a thousandth of an inch (0.025 mm) (i.e., very low oil encounter rates). Waves and wind can also be limiting factors for the safe operation of vessels and aircraft.
- Dispersants: Effective dispersion requires a threshold amount of surface mixing energy (typically a few knots of wind and a light chop) to be effective. At higher wind and sea conditions, dispersant evaporation and wind-drift will limit chemical dispersion application effectiveness; and, there is a point (~25-kt winds, 10-ft waves) where natural dispersion forces become greater, particularly for light oils. Because of droplet size versus slick thickness constraints and application dose-rate limitations, dispersants work best on slick thicknesses of a few thousandths (approx. 50 g/m^2) to hundredths of an inch (approx. 250 g/m^2). Improved dispersants, higher dose rates, and multiple-pass techniques may extend the thickness limitation to 0.1 inch (2.5 mm) or more.

As offshore response operations (surface dispersant and containment and recovery) are intended to be undertaken at the thickest part of the slick, 50 g/m^2 and 100 g/m^2 (aligning with the lower limit of BAOAC 4 and midpoint of BAOAC 5) are utilised by Woodside when using deterministic modelling (if required) to identify the most likely locations for surface dispersant application and containment and recovery operations.

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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	5,000-10,000

**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 10,000 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 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 thresholds described above are compared with the modelling results for the WCCS (Table 2-5).

2.3.4 Spill modelling results

2.3.4.1 Stochastic modelling results

The scenarios listed in Table 2 1 have been stochastically modelled. The receptors predicted to be contacted by surface (floating) and shoreline exposure values, together with the probability and timing of the contact, and any associated accumulated volumes, are detailed in Table 2-5.

This table covers floating and shoreline contact as it is relevant for planning spill clean-up. Contact within the water column, i.e. the predicted presence of dissolved and entrained hydrocarbons, is relevant for planning operational and scientific monitoring (OSM) activities. As such, these results are included in the OSM planning assessment in ANNEX C, Table C - 1.

It should be noted that the receptor polygons utilised by the modelling software overlap in some cases. This can result in the same shoreline accumulation being captured under a number of receptors. Where this has occurred, the receptors have been grouped and one accumulation listed.

2.3.4.2 Deterministic modelling results

Based upon the stochastic modelling results (Table 2-5), and as discussed in Section 2.3.2, neither scenario meets the trigger criteria for undertaking deterministic modelling, i.e. they do not meet the minimum exposure values required for feasible offshore and shoreline clean-up, or the criteria for OSM deterministic modelling. As such, no deterministic modelling has been undertaken for this Petroleum Activity.

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Table 2-5: Stochastic modelling results – probability and timing of surface and shoreline exposure values

	Probability (%) of floating oil contacting a receptor cell at	Minimum time (days) for contact by floating oil at	Probability (%) of floating oil contacting a receptor at	Minimum time (days) for contact by floating oil at	Probability (%) of floating oil contacting a receptor at	Minimum time (days) for contact by floating oil at	Probability (%) of oil accumulating on any shoreline at	Minimum time (days) for accumulation on shoreline at	Probability (%) of oil accumulating on any shoreline at	Minimum time (days) for accumulation on shoreline at	Probability (%) of oil accumulating on any shoreline at	Minimum time (days) for accumulation on shoreline at	Max accumulated volume (m^3) – averaged	Max accumulated volume (m^3) – worst replicate
	≥ 1 g/m²	≥ 1 g/m²	≥ 10 g/m²	≥ 10 g/m²	≥ 50 g/m²	≥ 50 g/m²	≥ 10 g/m²	≥ 10 g/m²	≥ 100 g/m²	≥ 100 g/m²	≥ 1,000 g/m²	≥ 1,000 g/m²		
Credible Scenario-01														
Scott Reef NR	5.5	0.17	2.5	0.21	1	0.21	6.5	0.42	3.5	0.42	NC	NC	2	80
Sandy Islet	7.5	0.33	1.5	0.33	0.5	0.38	6.5	0.42	3.5	0.42	NC	NC	2	80
Scott Reef North	100	0.04	100	0.04	100	0.04	NA	NA	NA	NA	NA	NA	NA	NA
Scott Reef South	26	0.04	16.5	0.04	8	0.04	6.5	0.42	3.5	0.42	NC	NC	2	80
Seringapatam Reef	4.5	1.29	0.5	1.58	<0.5	NC	NA	NA	NA	NA	NA	NA	NA	NA
Credible Scenario-02														
Ashmore Reef MP	<0.5	NC	<0.5	NC	<0.5	NC	0.5	16.75	0.5	17.21	NC	NC	<1	11
Scott Reef NR	4.5	0.88	1	0.92	<0.5	NC	2	2.21	1	2.25	NC	NC	<1	10
Ashmore Reef	<0.5	NC	<0.5	NC	<0.5	NC	0.5	16.75	0.5	17.21	NC	NC	<1	11
Sandy Islet	1	2.17	<0.5	NC	<0.5	NC	2	2.21	1	2.25	NC	NC	<1	10
Scott Reef North	2.5	1.54	0.5	1.54	<0.5	NC	NA	NA	NA	NA	NA	NA	NA	NA
Scott Reef South	6	0.58	2	0.62	<0.5	NC	2	2.21	1	2.25	NC	NC	<1	10
Seringapatam Reef	1.5	3.42	<0.5	NC	<0.5	NC	NA	NA	NA	NA	NA	NA	NA	NA

Key:			
NC	No contact		Submerged receptor
NA	Not applicable	^^	Results are at an exposure value of 250 g/m^2 – conservative as probability for 1,000 g/m^2 will be lower and time to contact longer

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3 IDENTIFY RESPONSE PROTECTION AREAS (RPAS)

In a response, monitor and evaluate – including trajectory modelling and vessel/aerial observations – would be used to predict RPAs that may be impacted. For the purposes of planning and appropriately scaling a response, modelling has been used to identify RPAs as outlined below in Figure 3-1.

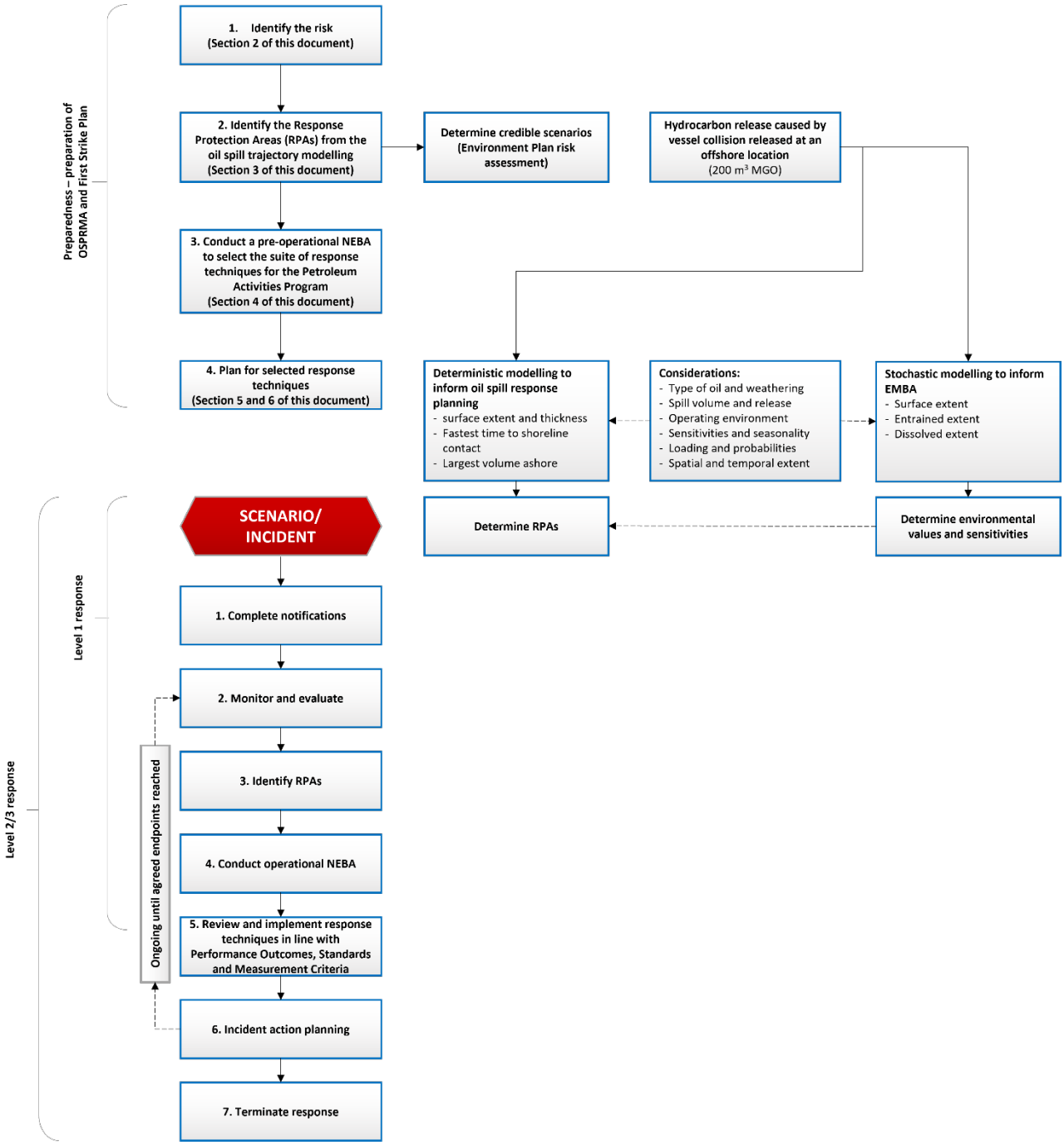


Figure 3-1: Identify Response Protection Areas (RPAs) flowchart

3.1 Identified sensitive receptor locations

Section 6.9.2 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 exposure values

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- receptors within the EMBA which meet the following:
  - a number of priority protection criteria/categories
  - International Union for Conservation of Nature (IUCN) marine protected area categories
  - high conservation value habitat and species
  - important socio-economic/heritage value.

3.2 Identify Response Protection Areas (RPAs)

RPAs have been selected on the basis of their environmental ecological, social, economic, cultural and heritage values and sensitivities and the ability to conduct a response based on the minimum response exposure values (Section 2.3.3). It is important to note that the results outlined in Table 3-1 are the combined results of the individual worst-case runs and do not indicate a single worst case credible scenario (where the timings and volumes are all expected from one release).

From the identified sensitive receptors described in Section 6.9.2 of the EP, only those which a shoreline response could feasibly be conducted (accumulation ≥100 g/m^2 for shoreline assessment and/or contact with surface slicks ≥10 g/m^2 for monitor and evaluate and/or oiled wildlife response) have been selected for response planning purposes. While not discounting other sensitivities, these RPAs have been used as the basis for demonstrating the capability to respond to the nature and scale of a spill from the WCCS and prioritising response techniques.

Table 3-1 outlines Response Protection Areas (RPAs) identified for feasible shoreline clean-up from the WCCS stochastic modelling results (CS-01). The full list of sensitive receptors potentially contacted from stochastic modelling (as per EMBA definition) are presented in the existing environment description (Section 4 of the EP) and impact assessment section (Section 6 of the EP) for each respective spill scenario.

The pre-operational NEBA (Annex A) includes additional RPAs contacted at lower exposure values to allow consideration of all feasible response techniques in the planning phase.

The RPAs identified in Table 3-1 are used to plan for the nature and scale of a shoreline response.

Table 3-1: Response Protection Areas (RPAs) from deterministic modelling

Response protection area	Conservation status	IUCN protection category	Minimum time to shoreline contact (above 100 g/m^2) in days [4]	Maximum shoreline accumulation (above 100 g/m^2) in m^3 [5]
Scott Reef South (including Sandy Islet)	Nature Reserve	N/A	3.5	0.4 days (10 hours)

4 This volume and time represent the first time to contact on defined shoreline polygon and the maximum volume ashore for that 24 hour period.

5 This volume and time represent the maximum volume ashore on defined shoreline polygon

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4 NET ENVIRONMENTAL BENEFIT ANALYSIS (NEBA)

A Net Environmental Benefit Analysis (NEBA) is a structured process to consider which response techniques are likely to provide the greatest net environmental benefit.

The NEBA process is stage 3 of the preparedness process and 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 both in the planning/preparedness process and during a response

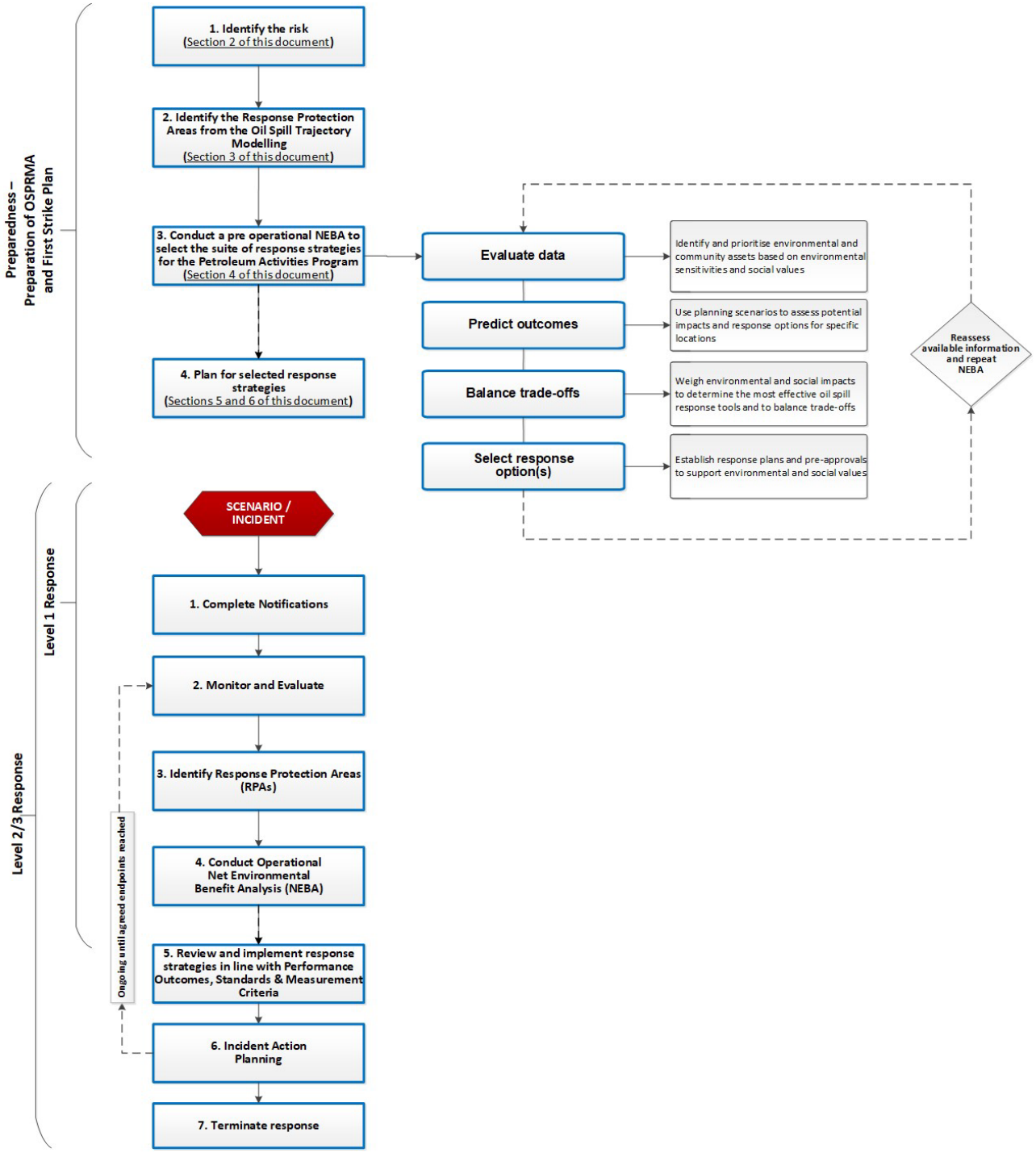


Figure 4-1: Net Environmental Benefit Analysis (NEBA) flowchart

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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 exposure values (Section 2.3.3) and the surface concentrations (Section 2.3.3.1).

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 Petroleum Activity are contained in ANNEX A: Net Environmental Benefit Analysis detailed outcomes.

4.2 Stage 1: Evaluate data

Woodside identifies and prioritises environmental and community assets based on environmental sensitivities and social values, informed through the use of trajectory modelling. Interpretation of stochastic oil spill modelling determines the EMBA for the release, which defines the spatial area that may be potentially impacted by the Petroleum Activity activities.

4.2.1 Define the scenario(s)

Woodside uses scenarios identified from the risk assessment in the EP to assess potential impacts and response options for specific locations. The WCCS is then selected for deterministic modelling (if required) 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 exposure values and deterministic modelling (if required) are then used to assess the feasibility/effectiveness and scale of the response. Modelling results are available in Table 2-5 and Table 3-1.

4.3 Stage 2: Predict Outcomes

Woodside uses planning scenarios to assess potential impacts and response options for specific locations. Locations with potential environmental impacts, selected from the stochastic modelling are included for assessment. Response exposure values and deterministic modelling are then used to assess the feasibility/ effectiveness of a response.

4.4 Stage 3: Balance trade-offs

Woodside considers environmental impacts and response effectiveness/ feasibility to determine the most effective oil spill response tools and balance trade-offs, using an automated NEBA tool. The tool considers potential benefits and impacts associated with a response at sensitive receptors and then considers the effectiveness/ feasibility of the response to select the response techniques carried forward to the ALARP assessment. The NEBA can be found in ANNEX A: Net Environmental Benefit Analysis detailed outcomes.

4.5 Stage 4: Select Best Response Options

To select the response technique, all the other stages in the NEBA process are considered and used to establish response plans and any pre-approvals to support protection of identified environmental and social values.

The response techniques implemented may vary according to a particular spill. The hydrocarbon type released and the sensitivities of the receptors (both ecological and socio-economic) may influence the response. The pre-operational NEBA broadly evaluates each response technique and supports decisions on whether they are feasible and of net environmental benefit. Response techniques that are not feasible or beneficial are rejected at this stage and not progressed to planning.

Further risks and impacts from implementing these selected response options are outlined in Section 7.

4.5.1 Determining potential response options

The available response techniques based on current technology can be summarised under the following headings:

- Monitor and evaluate
- Source control via vessel Shipboard Oil Pollution Emergency Plan (SOPEP)

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- 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

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.

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Table 4-1: Response technique evaluation – vessel collision

Response Technique	Effectiveness	Feasibility	Decision	Rationale for the decision
Hydrocarbon: MGO				
Monitor and evaluate	Will be effective in tracking the location of the spill, informing when it has entered State Waters, predicting potential impacts and triggering further monitoring and response techniques as required. Monitoring techniques include: • Predictive modelling of hydrocarbons – used throughout spill. 'Ground-truthed' using the outputs of all other monitoring techniques. • Surveillance and reconnaissance to detect hydrocarbons and resources at risk – from outset of spill. • Pre-emptive assessment of sensitive receptors at risk – triggered once operational monitoring informs likely RPAs at risk.	Monitoring of an MGO spill is a feasible response technique and outputs will be used to guide decision making on the use of other monitoring/response techniques and providing information to regulatory agencies including AMSA and the Western Australian (WA) Department of Transport and Major infrastructure (DTMI). Practicable techniques that could be used for this scenario include predictive modelling, surveillance and reconnaissance and monitoring of hydrocarbon presence in water.	Yes	Monitoring the spill will be necessary to: • validate trajectory and weathering models • determine the location and state of the slick • provide forecasts of spill trajectory • determine appropriate response techniques • determine effectiveness of response techniques • confirm impact pathways to receptors • provide regulatory agencies with required information.
Source control via vessel SOPEP	Controlling the spill of MGO at source would be the most effective way to limit the quantity of hydrocarbon entering the marine environment.	A spill of MGO from a vessel collision will be instantaneous and source control will be limited to what the vessel or facility can safely achieve whilst responding to the incident.	Yes	Ability to stop the spill at source will be dependent upon the specific spill circumstances and whether or not it is safe for response personnel to access/isolate the source of the spill.
Surface dispersant application	Application of surface dispersant would likely reduce the volumes of hydrocarbons contacting sensitive surface receptors. Dispersant can also enhance biodegradation and may reduce volatile organic compounds (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 predicts that floating oil will reach the minimum feasible exposure value at which to commence surface dispersant application (≥50 g/m^2) at Scott Reef North, this technique is not suitable for MGO spills as this hydrocarbon is prone to rapid spreading and evaporation and are not considered effective when applied on thin surface films such as MGO as the dispersant droplets tend to pass through the surface films without binding to the hydrocarbon resulting in the unnecessary addition of chemicals to the marine environment. The volatile nature of MGO is also likely to lead to unsafe conditions in the vicinity of fresh hydrocarbon thus this response technique is deemed inappropriate.	No	The application of dispersant to MGO is unnecessary as the MGO will rapidly evaporate and would thus unnecessarily introduce additional chemical substances to the marine environment. The additional entrainment would also increase exposure of subsea species and habitats to hydrocarbons.
Mechanical dispersion	Mechanical dispersion involves the use of a vessel's prop wash and/or fire hose to target surface hydrocarbons to achieve dispersion into the water column. However, this technique is of limited benefit in an open ocean environment where wind and wave action are likely to deliver similar advantages.	Although the technique is feasible, highly volatile hydrocarbons are likely to weather, spread and evaporate quickly. The volatile nature of the oil likely to lead to unsafe conditions in the vicinity of fresh hydrocarbon. Additionally, any vessel used for mechanical dispersion activities would be contaminated by the hydrocarbon and could potentially cause secondary contamination of unimpacted areas when exiting the spill area. The decontamination of a vessel used for mechanical dispersion activities would result in additional quantities of oily waste requiring appropriate handling and treatment.	No	Given the limited benefit of mechanical dispersion over natural wind and wave action, secondary contamination and waste issues, and the associated safety risk of implementing the response for this activity, this strategy is deemed unsuitable.
In situ burning	In situ burning is only effective where minimum slick thickness can be achieved.	Use of in situ burning as a response technique for MGO is unfeasible as the minimum slick thickness cannot be attained due to rapid spreading. In addition, there is a limited window of opportunity in which this technique can be applied (prior to evaporation of the volatiles) which is unlikely to be achieved. Furthermore, entering a volatile environment to undertake this technique would be unsafe for response personnel and its used would unnecessarily cause an increase in the release of atmospheric pollutants.	No	Diesel characteristics are not appropriate for the use of in situ burning and would unnecessarily cause an increase in the release of atmospheric pollutants.
Containment and recovery	Containment and recovery has an effective recovery rate of 5-10% when a hydrocarbon encounter rate of 25-50% is achieved at BAOAC 4 and 5 with a 50-100% coverage of 100–200 g/m^2.	Whilst modelling predicts that floating oil will reach the minimum feasible exposure value at which to commence containment and recovery (50 g/m^2) at Scott Reef North, this technique is not suitable for MGO spills as it is prone to rapid spreading and evaporation and is deemed unsuitable for effective containment and recovery operations. The volatile nature of MGO is also likely to lead to unsafe conditions in the vicinity of the hydrocarbon thus this response technique is deemed inappropriate.	No	Containment and recovery would be an inappropriate response technique for a spill of Marine Gas Oil (MGO). Corralling a volatile hydrocarbon such as MGO is deemed unsafe for response personnel thus this response strategy is not considered feasible. In addition to the safety issues, most of the spilled MGO would have been subject to rapid evaporation prior to the commencement of containment and recovery operations.

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Response Technique	Effectiveness	Feasibility	Decision	Rationale for the decision
Shoreline protection and deflection	Shoreline protection and deflection can be effective at preventing contamination of at-risk areas.	A MGO spill would be prone to rapid spreading and evaporation. Modelling predicts that whilst one shoreline receptor will be contacted at the response exposure value, this will occur within 10 hours, which is faster than shoreline protection teams could be deployed. Furthermore, the volatile nature of MGO is also likely to lead to unsafe conditions in the vicinity of the hydrocarbon. Operational monitoring will, however, be deployed from the outset of a spill to track the spill location and fate in real-time.	No	Although spill modelling predicts shoreline contact at Scott Reef within 10 hours, this timeframe is insufficient to mobilise and deploy shoreline protection and deflection equipment to such a remote location. Tidal influences, lack of safe access, and the absence of suitable anchoring points further limit the practicability of effective boom placement. Given these operational constraints, the deployment of this technique is considered unlikely to achieve meaningful protection and could cause greater environmental harm than the spill itself through physical disturbance to sensitive reef habitats.
Shoreline clean-up	Shoreline clean-up is an effective means of hydrocarbon removal from contaminated shorelines where coverage is at an optimum level of 250 g/m^2.	Spill modelling predicts shoreline contact above the response exposure value at one receptor location (Scott Reef South (including Sandy Islet)). Shoreline clean-up is therefore a feasible response technique for this scenario, where it is safe and practical to implement. However, an MGO spill would be prone to rapid spreading and evaporation and intrusive activities such as physical removal of waste can cause greater impacts than the oil alone. Secondary impacts can be minimised through the use of trained personnel to lead operations. Logistically, clean-up operations will require site access, decontamination, waste storage, personal protective equipment, catering and transport services to support personnel working on shorelines, which will be challenging and possibly lead to additional impacts at the remote location of Scott Reef. Monitor and evaluate activities will be deployed from the outset of a spill to track the spill location and fate in real-time to inform the need for and scale of clean-up operations.	Yes	While shoreline clean-up is a feasible technique, it is considered a secondary response strategy for this scenario. Shoreline clean-up activities can result in physical disturbance to sensitive shoreline habitats and intrusive activities require careful site-specific planning to minimise secondary impacts such as habitat disturbance, erosion and spreading of oil. Given the high rates of natural dispersion and biodegradation of MGO, and the significant logistical challenges of accessing and sustaining operations at the remote location of Scott Reef, this technique would only be used if an Operational NEBA indicated it would provide an overall benefit to the environment. Where it is safe and practical to implement, shoreline clean-up will be undertaken as directed by OM6: Shoreline Clean-up Assessment recommendations.
Oiled wildlife response	Oiled wildlife response is an effective response technique for reducing the overall impact of a spill on wildlife. This is mostly achieved through hazing to prevent additional wildlife from being contaminated and through rehabilitation of those already subject to contamination.	Due to the likely volatile atmospheric conditions surrounding a MGO spill, response options may be limited to hazing to ensure the safety of response personnel. The modelling undertaken predicts that no sensitive areas will be impacted thus it is unlikely that this technique would be required. Monitor and evaluate will, however, be deployed from the outset of a spill to track the spill location and fate in real-time. Thus, in the event that wildlife are at risk of contamination, oiled wildlife response will be undertaken in accordance with the Wildlife Response Operational Plan as and where required. In addition, any rehabilitation could only be undertaken by trained specialists.	Yes	The modelling undertaken predicts that no sensitive areas will be impacted thus it is unlikely that this technique would be required. However, in the event that wildlife are at risk of contamination, oiled wildlife response will be undertaken as and where required.

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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 A382148* (2026) 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/ Spill Impact Mitigation Assessment (SIMA), Woodside conducts a structured, semi-quantitative hydrocarbon spill process which has the following steps:

- considers the Response Planning Need identified in terms of surface area (km^2) and available surface hydrocarbon volumes (m^3) against existing Woodside capability
- 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.
- 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:

- a structured process for identifying and considering alternative, additional, and improved options has been completed for each selected response technique
- 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.
- where an alternative, additional and/or improved control measure is adopted, a measurable level of environmental performance has been assigned
- 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
- 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

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- 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.

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5.1 Monitor and evaluate

Monitor and evaluate includes the gathering and evaluation of data to inform the oil spill response planning and operations. It includes fate and trajectory modelling, spill tracking, weather updates and field observations. This response option is deployed in some capacity for every event.

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 (desktop)

Woodside maintains an Operational Monitoring Operational Plan. If shoreline contact is predicted, Response Protection Areas (RPAs) will be identified and assessed before contact. If shorelines are contacted, a shoreline assessment survey (SCAT) will be completed to guide effective shoreline clean-up operations per arrangements detailed in Woodside's Operational and Scientific Monitoring Bridging Implementation Plan (OSM-BIP) (see Section 5.6). This plan includes the process for the CIMT to mobilise resources depending on the nature and scale of the spill.

The proximity of Broome/ Port Hedland to the spill event location means that multiple logistical options are available to monitor the spill in relatively short timeframes. The primary mobilisation base for initial monitoring activities would be Broome/ Port Hedland. However, in the unlikely event of an extended spill with potential to impact receptors further afield, monitoring activities may also be mobilised from Exmouth, Dampier or Karratha.

5.1.1 Response need based on predicted consequence parameters

The following statements identify the key parameters upon which a response need can be based:

- Floating surface oil in sufficient concentrations for effective operational monitoring is expected to be present with surface concentrations of 50 g/m^2 extending up to 22 km, 10 g/m^2 up to 51 km and 1 g/m^2 up to 157 km from the release location, respectively, for scenario CS-01.
- The shortest timeframe for shoreline accumulation (≥10 g/m^2) is predicted at 0.4 days (10 hours) at Scott Reef South (CS-01).
- The fastest time to contact for oil at concentrations of dissolved hydrocarbons greater than 10 ppb at shoreline receptors is 1 hour at Scott Reef North and Scott Reef South.
- Arrangements for support organisations who provide specialist services or resources should be tested regularly.
- Plans, procedures and support documents need to be in place for Operational and Support Sections. These should be reviewed and updated regularly.
- The duration of the spill would be instantaneous with response operations extending until surface hydrocarbons are no longer visible, and no additional response or clean-up of wildlife or habitats is predicted.

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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 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 5.8)
1	Oil spill trajectory modelling	1.1	Initial modelling available within 6 hours using the Rapid Assessment Tool	1, 3B, 3C, 4
		1.2	Detailed modelling available within 4 hours of RPS 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 common operating picture (COP) daily to improve the accuracy of other Operational Monitoring techniques.	1, 3B, 4
3	Satellite imagery	3.1	Contract in place with 3rd party provider to enable access and analysis of satellite imagery. Imagery source/type requested on activation of service.	1, 3C, 4
		3.2	3rd party provider will confirm availability of an initial acquisition within 2 hours	1, 3B, 3C, 4
		3.3	First image received with 24 hours of Woodside confirming to 3rd party provider its acceptance of the proposed acquisition plan.	1
		3.4	3rd party provider to submit report to Woodside per image. Report is to include a polygon of any possible or identified slick(s) with metadata.	1
		3.5	Data received to be uploaded into Woodside COP daily to improve accuracy of other Operational Monitoring techniques.	1, 3B, 4
		3.6	Satellite Imagery services available and employed during response	1, 3C, 4
4	Aerial surveillance	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 2 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 FSP. Observers report available to the IMT within 2 hours of landing after each sortie.	1, 2, 3B, 4
		4.4	Unmanned Aerial Vehicles/Systems (UAV/UASs) to support Shoreline Contamination Assessment Technique (SCAT), containment and recovery and surface dispersal and pre-emptive assessments as contingency if required.	1, 2
5	Pre-emptive assessment	5.1	Desktop pre-emptive assessment of sensitive receptors to help determine Response Protection Areas (RPAs) to guide deployment of response personnel	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 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 5.8)
	of sensitive receptors	5.2	If response personnel are deployed, provide daily reports to the IMT on the status of RPAs and maximise the effective use 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 activities up to and including the identified WCCS. This is demonstrated by the following:

- Woodside has a documented, structured and tested capability for Operational Monitoring operations including internal trajectory modelling capabilities, tracking buoys located offshore and contracted aerial observation platforms with access to trained observers.
- Woodside and its third-party service providers seek to maintain 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.

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5.2 Source Control via vessel Shipboard Oil Pollution Emergency Plan (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 Petroleum Activity 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 International Maritime Organization (IMO) Resolution MEPC.54 (32) adopted on 6 March 1992, as amended by resolution MEPC.86 (44) adopted on 13 March 2000.

Its purpose is to set in motion the necessary actions to stop or minimise oil discharge and mitigate its effects and outlines responsibilities, pollution reporting requirements, procedures and resources needed in the event of a hydrocarbon spill from vessel activities.

In the event of the WCCS vessel collision event, the vessel master may engage precautionary marine manoeuvres to avoid collision or commence pumping operations to transfer MGO 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 Petroleum Activity which are detailed in Section 6.9 of the EP. The vessel master's roles and responsibilities are described in Section 7.3 of the EP.

Performance standards for each contracted Petroleum Activity vessel are detailed in the vessel's specific SOPEP.

These standards maintain availability of sufficient resources and are adequately tested for successful implementation of the SOPEP in the event of a hydrocarbon spill.

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5.3 Shoreline Clean-up

Shoreline clean-up may be undertaken using a broad range of techniques when floating hydrocarbons contact shorelines. The timing, location and extent of shoreline clean-up activities can vary from one scenario to another, depending on the hydrocarbon type, sensitivities and values contacted, shoreline type and access, degree of oiling, and area oiled.

Shoreline clean-up is typically undertaken as a three-phase process:

- Phase 1 (gross contamination removal) involving the collection of bulk oil, either floating against the shoreline or stranded on it
- Phase 2 (moderate to heavy contamination removal) involving removal or in-situ treatment of shoreline substrates such as sand or pebble beaches, and
- Phase 3 (final treatment or polishing) involving removal of the remaining residues of oil.

As phase 1 typically involves recovery of floating and pooled oil, and phase 3 removes minor volumes, they have not been considered in the assessment of response need for the scenarios identified.

The Shoreline Clean-up Operational Plan details the mobilisation and resource requirements for a shoreline clean-up operation including the logistics, support and facility arrangements to manage the movement of personnel and resources.

The Shoreline Clean-up Operational Plan includes the process for the IMT to mobilise resources depending on the nature and scale of the spill. Woodside would activate and mobilise trained and competent personnel in shoreline assessment before or following shoreline contact at response exposure values.

Shoreline clean-up consists of different manual and mechanical recovery techniques to remove hydrocarbons and contaminated debris from a shoreline; this is to minimise ongoing environmental contamination and impact. The National Plan also provides guidance on shoreline clean-up techniques as outlined in National Plan Guidance Response assessment and termination of cleaning for oil contaminated foreshores (AMSA 2015).

5.3.1 Response need based on predicted consequence parameters

The following statements identify the key parameters upon which the response need can be based:

- The fastest time to shoreline contact is predicted to be 0.4 days at Scott Reef South (including Sandy Islet) with shoreline accumulation averaging 2 m^3 (across all replicate simulations) and up to 80 m^3 in the worst replicate simulation (the single worst run).
- MGO is likely to be difficult to remove given its light nature and high weathering potential. It can be readily washed from sediments by wave and tidal flushing. The likely waste products from an MGO spill shoreline response would be contaminated sand and debris.
- The duration of the spill would be instantaneous with response operations extending surface hydrocarbons are no longer visible, and no additional response or clean-up of wildlife or habitats is predicted.
- Desktop pre-emptive assessment and shoreline assessments (OM6: Shoreline Clean-up Assessment via the Woodside OSM-BIP) will be mobilised prior to shoreline clean-up operations to determine the appropriateness of clean-up tactics. Selection of shoreline clean-up methods and controls to prevent further damage from the clean-up activities are to be undertaken in consultation with the Control Agency and selected based on a NEBA.
- Following Shoreline Assessment and agreement of prioritisation with WA Department of Transport and Major Infrastructure, clean-up operations would commence until agreed termination criteria are reached.
- Arrangements for support organisations who provide specialist services (trained personnel, labour hire, shoreline clean-up, and site management equipment) and/or resources and should be tested regularly.
- Tactical Response Plans (TRPs) for Response Protection Areas (RPAs) along with other relevant plans, procedures and support documents should be in developed and in place for Operational and Support Sections. These should be reviewed and updated regularly.

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In addition, a number of assumptions are required to estimate the response need for shoreline clean-up. These assumptions have been described in the table below.

Table 5-2: Response Planning Assumptions – Shoreline Clean-up

Response planning assumptions: Shoreline clean-up	
Safety considerations	Shoreline clean-up operations cannot be implemented if the safety of response personnel cannot be guaranteed. This requires an initial and ongoing risk assessment of health and safety hazards and risks at the site. Personnel safety issues may include: • hydrocarbon gas and/or liquid exposure • waves and/or sea states, tidal cycle and intertidal zone limits • presence of wildlife • high ambient temperatures.
Operational considerations	Scott Reef/ Sandy Islet presents operational and environmental constraints for shoreline clean-up activities including: • remote location presenting logistical challenges for landing vessels, people and equipment • small sand island within a submerged and emergent reef system presenting challenges for personnel to work with suitable facilities and waste storage • landing and undertaking shoreline clean-up activities is likely to result in damage of any turtle and bird nesting sites that may be present.
Manual shoreline clean-up operation (Phase 2)	One, manual shoreline clean-up operation (Phase 2) may include: • 1–2 x trained supervisor • 8–10 x personnel/ labour hire (possibly smaller teams due to RPA sensitivities) • Supporting equipment for manual clean-up including rakes, shovels, plastic bags etc.
Physical properties	Surface exposure value • Lower – 100 g/m^2 – 100% coverage of ‘stain’ – cannot be scratched off easily on coarse sediments or bedrock – Expected trigger to undertake detailed shoreline survey • Optimum – 250 g/m^2 – 25% coverage of ‘coat’ – can be scratched off with a fingernail on coarse sediments – Expected trigger to commence clean-up operations

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Table 5-3: Shoreline Clean-up techniques and recommendations

Technique	Description	Shoreline type		Application
		Recommended	Not recommended	
Natural recovery	Allowing shoreline to self-clean; no intervention undertaken.	Remote and inaccessible shorelines for personnel, vehicles and machinery. Other clean-up techniques may cause more damage than allowing the shoreline to naturally recover. Natural recovery may be recommended for areas with mangroves and coral reefs due to their sensitivity to disturbance from other shoreline clean-up techniques. High-energy shorelines: where natural removal rates are high, and hydrocarbons will be removed over a short timeframe.	Low-energy shorelines: these areas tend to be where hydrocarbon accumulates and penetrates soil and substrates.	May be employed, if the operational NEBA identifies that other clean-up techniques will have a negligible or negative environmental impact on the shoreline. May also be used for buried or reworked hydrocarbons where other techniques may not recover these.
Manual recovery	Use of manpower to collect hydrocarbons from the shoreline. Use of this form of clean-up is based on type of shoreline.	Remote and inaccessible shorelines for vehicles and machinery. Areas where shorelines may not be accessible by vehicles or machinery and personnel can recover hydrocarbons manually. Where hydrocarbons have formed semi-solid to solid masses that can be picked up manually. Areas where nesting and breeding fauna cannot or should not be disturbed.	Coral reef or other sensitive intertidal habitats, as the presence of a response may cause more environmental damage then allowing them to recover naturally. For some high-energy shorelines such as cliffs and sea walls, manual recovery may not be recommended as it may pose a safety threat to responders.	May be used for sandy shorelines. Buried hydrocarbons may be recovered using shovels into small carry waste bags, but where possible the shoreline should be left to naturally recover to prevent any further burying of hydrocarbons (from general clean-up activities).
Sorbents	Sorbent boom or pads used to recover fluid or sticky hydrocarbons. Can also be used after manual clean-up to remove any residues from crevices or from vegetation.	When hydrocarbons are free-floating close to shore or stranded onshore. As a secondary treatment method after hydrocarbon removal and in sensitive areas where access is restricted.	Access for deploying and retrieving sorbents should not be through soft or sensitive habitats or affect wildlife.	Used for rocky shorelines. Sorbent boom will allow for deployment from small shallow draught vessels, which will allow deployment close to shore where water is sheltered and to aid recovery. Sorbents will create more solid waste compared with manual clean-up, so will be limited to cleaning rocky shorelines.

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Technique	Description	Shoreline type		Application
		Recommended	Not recommended	
Vacuum recovery, flushing, washing	The use of high volumes of low-pressure water, pumping and/or vacuuming to remove floating hydrocarbons accumulated at shorelines.	Suited to rocky or pebble shores where flushing can remobilise hydrocarbons (to be broken up) and aid natural recovery. Any accessible shoreline type from land or water. May be mounted on barges for water-based operations, on trucks driven to the recovery area, or hand-carried to remote sites. Flushing and vacuum may be useful for rocky substrate. Medium- to high-energy shorelines where natural removal rates are moderate to high. Where flushed hydrocarbons can be recovered to prevent further oiling of shorelines.	Areas of pooled light, fresh hydrocarbons may not be recoverable via vacuum due to fire and explosion risks. Shorelines with limited access. Flushing and washing not recommended for loose sediments. High-energy shorelines where access is restricted.	High volume low pressure (HVLP) flushing and washing into a sorbent boom could be used for rocky substrate, if protection booming has been unsuccessful in deflecting hydrocarbons from these areas.
Sediment reworking	Movement of sediment to surf to allow hydrocarbons to be removed from the sediment and move sand via heavy machinery.	When hydrocarbons have penetrated below the surface. Recommended for pebble/cobble shoreline types. Medium- to high-energy shorelines where natural removal rates are moderate to high.	Low-energy shorelines as the movement of substrate will not accelerate the natural cleaning process. Areas used by fauna which could potentially be affected by remobilised hydrocarbons.	Use of wave action to clean sediment: appropriate for sandy beaches where light machinery is accessible.
Vegetation cutting	Cutting vegetation to prevent oiling and reduce volume of waste and debris.	Vegetation cutting may be recommended to reduce the potential for wildlife being oiled. Where oiling is restricted to fringing vegetation.	Access in bird-nesting areas should be restricted during nesting seasons. Areas of slow-growing vegetation.	May be used on shorelines where vegetation can be safely cleared to reduce oiling.
Cleaning agents (oil spill control agent [OSCA])	Application of chemicals such as dispersants to remove hydrocarbons.	May be used for manmade structures and where public safety may be a concern.	Natural substrates and in low-energy environments where sufficient mixing energy is not present.	Not recommended for shorelines. Could be used for manmade structures such as boat ramps.

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5.3.2 Environmental performance based on need

Table 5-4: Environmental Performance – Shoreline Clean-up

Environmental Performance Outcome		To remove bulk and stranded hydrocarbons from shorelines and facilitate shoreline amenity habitat recovery.		
Control measure		Performance Standard		Measurement Criteria (Section 5.8)
6	Shoreline responders	6.1	In liaison with WA DTMI (for Level 2/3 incidents), deployment of 1 shoreline clean-up team to contaminated RPAs comprised of: • 1–2 trained specialists per operation • 8–10 personnel/labour hire (possibly a smaller team due to RPA sensitivities) • Personnel sourced through resource pool within 24–48 hours of request from the IMT.	1, 2, 3A, 3B, 3C, 4
		6.2	Relevant Tactical Response Plans (TRPs) will be identified in the first strike plan for activation within 24 hours.	1, 3A, 3C, 4
		6.3	Clean-up operations for shorelines in line with results and recommendations from SCAT outputs	1, 3A, 3B
		6.4	All shoreline clean-up sites will be zoned and marked before clean-up operations commence to prevent secondary contamination and minimise the mixing of clean and oiled sediment and shoreline substrates.	
		6.5	In liaison with WA DTMI (for Level 2/3 incidents), mobilise and deploy 1 shoreline clean-up operation by Week 1.	1, 2, 3A, 3C, 4 1, 3B, 4
		6.6	The safety of shoreline response operations will be considered and appropriately managed. During shoreline clean-up operations: • All personnel in a response will receive an operational/safety briefing before commencing operations • Gas monitoring and site entry protocols will be used to assess safety of an operational area before allowing access to response personnel	
		6.7	Open communication line to be maintained between IMT and infield operations to ensure awareness of progress against plan(s)	1, 3A, 3B
7	Shoreline clean up equipment	7.1	Contract in place with 3rd party providers to access equipment.	1, 3A, 3C, 4
		7.2	Equipment mobilised from closest stockpile (detail in activity specific ALARP) within 24-48 hours.	
		7.3	Supplementary equipment mobilised from Australian Marine Oil Spill Centre (AMOSC) and State stockpiles within 48 hours.	1, 3C, 4
		7.4	Supplementary equipment mobilised from OSRL within 72 hours (if required).	
8	Management of Environmental Impact of the response risks	8.1	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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Environmental Performance Outcome		To remove bulk and stranded hydrocarbons from shorelines and facilitate shoreline amenity habitat recovery.		
Control measure		Performance Standard		Measurement Criteria (Section 5.8)
		8.2	Shallow draft vessels will be used to access remote shorelines to minimise the impacts associated with seabed disturbance on approach to the shorelines	
		8.3	Shoreline access route (foot, car, vessel and helicopter) with the least environmental impact identified will be selected by a specialist in SCAT operations	
		8.4	Vehicular access will be restricted on dunes, turtle nesting beaches and in mangroves	
		8.5	Removal of vegetation will be limited to moderately or heavily oiled vegetation	
		8.6	Oversight by trained personnel who are aware of the risks	
		8.7	Trained unit leader's brief personnel of the risks prior to operations	

The resulting shoreline clean-up capability has been assessed against the WCCS. The range of techniques provide an ongoing approach to shoreline clean-up at identified RPAs. Woodside's capability can cover all required shoreline clean-up operations for the Petroleum Activity.

Whilst modelling predicts shoreline contact from day 1 (Scott Reef South (including Sandy Islet)) Woodside is satisfied that the current capability is managing risks and impacts to ALARP.

The capability available meets the need identified for this activity. The shoreline clean-up capability has the following expected performance (if required during a response):

- Woodside has the capacity to mobilise and deploy multiple shoreline clean-up teams in week 1 to Scott Reef/ Sandy Islet using existing labour hire contracts with Woodside, AMOSC, Core Group and OSRL team leads, and appropriate shoreline response equipment. However, due to the environmental sensitives of Scott Reef/ Sandy Islet, it may be more appropriate to conduct clean-up activities with one small team over a longer period of time using more passive recovery techniques.
- Assessment of response capability indicates that for a worst-case scenario the actual teams required would meet the available capability and the response would be completed by end month 1, even with the use of smaller teams and passive recovery techniques.
- Woodside has considered deployment of additional personnel to undertake shoreline clean-up operations but is satisfied that the identified level of resource is balanced between environmental sensitivities, cost, time and effectiveness. The most significant constraint on expanding the scale of response operations is the potential ecological impacts of positioning large numbers of clean-up responders on a small, remote island. The numbers of response personnel and techniques employed during any clean-up operation would need to be carefully evaluated via an operational NEBA and evaluate the trade-offs between sending multiple clean-up teams or smaller numbers of teams.
- TRPs have been developed for all identified RPAs excepting international locations.
- Woodside has assessed the existing capability available and considered potential alternative, additional and improved control measures. Where control measures have been selected and implemented, they are included in Section 6.3.

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5.4 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 DTMI State Hazard Plan – Maritime Environmental Emergencies (SHP-MEE). It is the responsibility of DBCA to administer the WAOWRP under the direction of the DTMI. 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 DTMI. 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.

5.4.1 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 exposure values for floating and shoreline oil for the external coating of wildlife to be 10 g/m^2 for floating, and 100 g/m^2 for shoreline accumulation. It should however be noted that toxicity exposure values for wildlife are likely to be highly variable due to differences in species sensitivity, type of hydrocarbon, type of exposure (ingestion or external oiling), life-stage, and on-water versus land habitat.

For planning purposes, determination of wildlife priority protection areas is based on stochastic modelling of the worst-case spill scenarios at 10 g/m^2 for floating, and 100 g/m^2 for shoreline accumulation (acknowledging that impacts to wildlife may occur at lower concentrations), the known presence of wildlife, and in consideration of:

- 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 5-5 outlines the wildlife response areas for this activity. At the time of a spill, identification and allocation of wildlife RPAs should also take into consideration any key biological activities. Additional detail regarding species and their key biological activities within the vicinity of the Petroleum Activity are described in Section 4 of the Environment Plan.

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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 5-5: Key at-risk species potentially in RPAs and open ocean (CS-01)

Species	Scott Reef South (including Sandy Islet)	Scott Reef North	Seringapatam Reef	Open Ocean	Scott Reef South (including Sandy Islet)
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:

- The shortest timeframe for floating oil at ≥10 g/m^2 is predicted at Scott Reef North and Scott Reef South within 1 hour for CS-01.
- The shortest timeframe for shoreline accumulation at the minimum required exposure values (≥100 g/m^2) is predicted to be 10 hours at Scott Reef South (including Sandy Islet) (80 m^3 worst-case individual simulation).
- 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 operational 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 is 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 5-6).

Table 5-6: 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

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that cannot be retrieved and integration with operational and 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 (DBCA 2022b).

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.

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5.4.2 Environmental performance based on need

Table 5-7: Environmental Performance – Oiled Wildlife Response (OWR)

Environmental Performance Outcome		OWR is conducted in accordance with the Western Australian Oiled Wildlife Response Plan (WAOWRP, 2022) to meet legislative requirements to house, release or euthanise wildlife under the *Biodiversity Conservation Act 2016*.		
Control measure		Performance Standard		Measurement Criteria (Section 5.8)
9	Wildlife response arrangements	9.1	Oiled Wildlife Operational Plan in place and utilised during a response to plan, coordinate, implement and terminate operations	1, 3A, 4
		9.2	Initiate a wildlife first strike response within 24 hours of confirmed or imminent wildlife contact as directed by Operational Monitoring Plan (OMP): Marine Fauna Assessment and in liaison with DBCA.	1
10	Wildlife response equipment	10.1	Maintain contract with AMOSC for immediate access to oiled wildlife response equipment.	1, 3C, 4
		10.2	Maintain contract with OSRL to access additional oiled wildlife response equipment.	1, 3C, 4
11	Wildlife responders	11.1	Two Oiled Wildlife Team Members to supervise the oiled wildlife operations who have completed an OWR Management course.	1, 2, 3B
		11.2	Maintain contract with AMOSC for immediate access to trained oiled wildlife response specialists	1, 3B, 3C
		11.3	Maintain contract with OSRL to access additional trained OWR specialists	1, 3B, 3C
		11.4	Open communication line to be maintained between IMT and infield operations to ensure awareness of progress against plan(s).	1, 3A, 3B
12	Management of environmental impacts of response risks	12.1	Oiled wildlife operations (including hazing) would be implemented with advice and assistance from the Oiled Wildlife Advisor from the DBCA, and in accordance with the processes and methodologies described in the WA Oiled Wildlife Response Plan (OWRP) and the relevant regional plan.	1

The resulting wildlife response capability has been assessed against the WCCS (CS-01). 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 and/or OM5: Rapid Marine Fauna Assessment 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.

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5.5 Waste Management

Waste management is considered a support technique to wildlife response 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 shoreline clean-up and wildlife response, and/or
- Solids/semi-solids (oily solids, garbage, contaminated materials) and debris (e.g. seaweed, sand, woods, and plastics) collected during shoreline clean-up and wildlife response.

Expected waste volumes during an event are likely to vary depending on oil type, volume released, response techniques employed and how weathering of hydrocarbons. Waste management, handling and capacity should be scalable to maintain continuous response operations.

All waste management activities will follow the Environment Protection (Controlled Waste) Regulations 2004 and the waste will be managed to minimise final disposal volumes. Waste treatment techniques will consider contaminated solids treatment to allow disposal to landfill and solids with high concentrations of hydrocarbon will be treated and recycled where possible or used in clean fill if suitable.

The waste products would be transported from response locations to the nearest suitable staging area/waste transfer station for treatment, disposal or recycling. Waste will be transferred with appropriately licensed vehicles. Containers will be available for temporary waste storage and will be:

- labelled with the waste type
- provided with appropriate lids to prevent waste being blown overboard
- 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.

5.5.1 Response need based on predicted consequence parameters

Table 5-8: Response Planning Assumptions – Waste Management

Response planning assumptions: Waste management	
Waste loading per m^3 oil recovered (multiplier)	Shoreline clean-up (manual) – ~5–10x multiplier for oily solid and liquid wastes generated by manual clean-up.
	Oiled wildlife response – ~1 m^3 of oily solid and liquid waste generated for each wildlife unit cleaned

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5.5.2 Environmental performance based on need

Table 5-9: Environmental Performance – Waste Management

Environmental Performance Outcome		To minimise further impacts, waste will be managed, tracked and disposed of in accordance with laws and regulations.		
Control measure		Performance Standard		Measurement Criteria (Section 5.8)
13	Waste Management	13.1	Contract with waste management services for transport, removal, treatment and disposal of waste	1, 3A, 3B, 3C, 4
		13.2	Access to at least 213 m^3 of solid and liquid waste storage available within 2 days upon activation of 3rd party contract.	
		13.3	Access to up to 2,400 m^3 by day 6.	
		13.4	Recovered hydrocarbons and wastes will be transferred to licensed treatment facility for reprocessing or disposal.	
		13.5	Waste management provider support staff available year-round to assist in the event of an incident with waste management as detailed in contract.	
		13.6	Open communication line to be maintained between IMT and waste management services to ensure the reliable flow of accurate information between parties.	
		13.7	Waste management to be conducted in accordance with Australian laws and regulations	1, 3A, 3B
		13.8	Waste management services available and employed during response	1, 3A, 3B, 3C, 4
14	Management of environmental impacts of response risks	14.1	Teams will segregate liquid and solid wastes at the earliest opportunity.	1, 3A, 3B, 3C, 4

The resulting waste management capability has been assessed against the WCCS. The range of techniques provide an ongoing approach to waste management at identified RPAs.

The largest volumes ashore occur only in Week 1, averaging 2 m^3 (across all replicate simulations) and up to 80 m^3 in the worst replicate simulation (the single worst run). Based on the worst case maximum volume of 80 m^3 ashore, an estimated daily peak of 160-914 m^3 of waste may be generated from shoreline clean-up operations. Woodside has access to 124 m^3 waste storage on day 1,675 m^3 by day 4, and 2,400 m^3 by day 6 therefore the capability available meets the need identified.

It indicates that the waste management capability has the following expected performance:

- Shoreline operations may generate a daily peak of 160-914 m^3 within Week 1. No additional shoreline contact is predicted after Week 1
- Woodside has assessed the existing capability available and considered potential alternative, additional and improved control measures. Where control measures have been selected and implemented, they are included in Section 6.5.
- Woodside's waste contractor has access to ~120,000 m^3 to treat overall waste volumes. The waste management requirements are within Woodside's and its service providers existing capacity.

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5.6 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)** – Is undertaken during the course of the spill and includes any physical, chemical and biological assessments that may guide operational decisions such as selecting the appropriate response and mitigation methods and/or to determine a response activity. This monitoring is additional to the activities (aerial/vessel surveillance, tracking buoys, oil spill trajectory modelling and satellite tracking) performed as part of the Monitor and Evaluate Strategy (Section 5.1). 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. For the Operational Monitoring Plan (OMP) initiation and termination criteria during a Level 2–3 spill event refer to Table 9-1 of the Joint Industry OSM Framework (APPEA [now Australian Energy Producers (AEP)] 2021).
- **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 Scientific Monitoring Plan (SMP) initiation and termination criteria during a Level 2–3 spill event refer to Table 9-2 of the Joint Industry OSM Framework (APPEA [now Australian Energy Producers (AEP)] 2021).

Woodside has developed a Woodside OSM Bridging Implementation Plan (OSM-BIP), 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 (APPEA [now Australian Energy Producers (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 5-10 lists the Joint Industry OMPs and SMPs that are relevant to the Petroleum Activity. The aims/objectives of each OMP and SMP are listed in Tables 5-1 and 6-1 of the Joint Industry OSM Framework respectively. Woodside confirms it has reviewed these aims/objectives and determined they are all appropriate to address the potential impacts, risks and response activities of this activity, noting that dispersant application is not a suitable response strategy for this activity.

The OSM-BIP is structured so that it can provide a flexible framework that can be adapted to individual spill incidents. The Combined OSM Planning Area (refer to Section 2.1 of the OSM-BIP), derived from all Woodside worst-case scenarios, represents the geographical extent of the Woodside OSM-BIP.

The OSM requirements for this activity's credible spill scenarios, including monitoring priorities, implementation timeframes and capability is provided in ANNEX C: Petroleum Activity OSM Activity Specific Requirement and Verification of OSM-BIP Adequacy.

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 (APPEA [now AEP] 2021)) during the 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 5-10: Joint industry OSM plans relevant to Petroleum Activity

Operational Monitoring	Relevant for the activity	Scientific Monitoring	Relevant for the activity
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	✓

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Operational Monitoring	Relevant for the activity	Scientific Monitoring	Relevant for the activity
OM4a: Dispersant Effectiveness Monitoring (Subsea)	×	SM4: Seabirds and Shorebirds Assessment	✓
OM4b: Dispersant Effectiveness Monitoring (Surface)	×	SM5: Marine mega-fauna Assessment	✓
OM5: Rapid Marine Fauna Surveillance	✓	SM6: Benthic habitat Assessment	✓
OM6: Shoreline Clean-up Assessment (SCAT)	✓	SM7: Marine fish and elasmobranch assemblages assessment	✓
		SM8: Fisheries Impact Assessment	✓
		SM9: Heritage Features Assessment	✓
		SM10: Social Impact Assessment	✓

5.6.1 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^2.
- The stochastic run with the shortest timeframe for shoreline accumulation at 100 g/m^2 predicted is 10 hours to Scott Reef South (including Sandy Islet) (CS-01).

In addition, a number of assumptions are required to estimate the response need for SCAT. These assumptions have been described in Table 5-11. Consequently, for planning purposes and based on the modelling results for shortest time to contact at 100 g/m^2 there is one RPA (Scott Reef South (including Sandy Islet)) requiring 2 SCAT specialists. These resourcing requirements can be met via the resourcing arrangements outlined in Table 8-3 of the OSM-BIP.

Table 5-11: Response planning assumptions – SCAT

Response planning assumptions: SCAT	
Safety considerations	Shoreline clean-up operations cannot be implemented if the safety of response personnel cannot be guaranteed. This requires an initial and ongoing risk assessment of health and safety hazards and risks at the site. Personnel safety issues may include: • hydrocarbon gas and/or liquid exposure • waves and/or sea states, tidal cycle and intertidal zone limits • presence of wildlife • high ambient temperatures.
SCAT	Deployment of 2 specialists in SCAT from resource pool for each of the RPAs with predicted impacts

5.6.2 Summary – Operational and scientific monitoring

A detailed OSM preparedness assessment is provided in ANNEX C: Petroleum Activity OSM Activity Specific Requirement and Verification of OSM-BIP Adequacy.

The ALARP assessment for operational and scientific monitoring (Section 6.6 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.

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5.6.3 Environmental performance based on need

Table 5-12: 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 5.8)
15	OSM arrangements	15.1	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
		15.2	OSM Implementation Lead responsible for overseeing implementation of OMP and SMP components in accordance with the Woodside OSM Bridging Implementation Plan.	
16	Access to adequate OSM capability to provide both initial and ongoing monitoring	16.1	Maintain contract with third-party OSM Services Provider to provide access to suitably qualified and competent personnel and equipment to assist in the implementation of monitoring in accordance with the capability and resourcing requirement described in Sections 8–10 of the OSM-BIP and the activity-specific capability assessment in Table C - 8 and Table C - 9 in ANNEX C: Petroleum Activity OSM Activity Specific Requirement and Verification of OSM-BIP Adequacy.	3A, 3B, 3C, 4
		16.2	Obtain monthly capability reports from OSM Service Provider to demonstrate the capability described in Section 10 of the OSM-BIP is available throughout the activity	
		16.3	Annual testing of OSM Service Provider standby arrangements and activation process	
17	Baseline studies assurance	17.1	Annual review of environmental baseline data for all locations where spill modelling has predicted contact at relevant hydrocarbon exposure values within 7 days	3C
18	OSM-BIP maintenance	18.1	Annual review will be conducted according to the criteria in Section 11 of the OSM-BIP	3A, 3B, 3C, 4
19	OSM response	19.1	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 [now AEP] 2021)	1
		19.2	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	
		19.3	If the OSM Implementation Lead identifies that additional monitoring capability is required beyond that described in Section 10 of the OSM-BIP, the need for these resources will be identified as soon as practicable and mobilised through the OSM Services Provider Contract, which includes provisions for scaling up personnel to meet monitoring program requirements	

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		19.4	Decisions regarding co-mobilisation of monitoring teams will be determined following a spill event, as part of the Incident Action Planning process. These decisions will be made by the CIMT in consultation with the OSM Services Provider and relevant stakeholders, with due consideration given to safety, access to sensitive receptors, timing, and data quality requirements	
		19.5	OSM to be conducted in accordance with the Woodside OSM-BIP and, where relevant to the activity, the assessment detailed in ANNEX C: Petroleum Activity OSM Activity Specific Requirement and Verification of OSM-BIP Adequacy.	
		19.6	Monitoring prioritisation will be undertaken in accordance with the process and checklist provided in Table 13-1, informed by the guidance in Section C.2 of the OSPRMA	
		19.7	Mobilisation and implementation of OMPs and SMPs will be undertaken in accordance with the indicative timeframes and sequencing described in Section C.3 of the OSPRMA and Part B of the OSM-BIP	
		19.8	Implementation of OSM will comply with the minimum standards listed in Appendix A of the Joint Industry OSM Framework	
		19.9	Once Scientific Monitoring data reports are drafted they will be peer reviewed by an expert panel for data integrity	
		19.10	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 [now AEP] 2021)	
20	Shoreline Clean-up Assessment Technique (SCAT)	20.1	Mobilisation within 24 hours, in agreement with WA DTMI (for Level 2/3 incidents), deployment of 2 x specialist(s) in SCAT from resource pool for each of the Response Protection Areas (RPAs) with predicted impacts	1, 2, 3B, 3C, 4
		20.2	Reports from OM6: Shoreline Clean-up Assessment will be provided to the IMT daily, detailing the assessed areas to maximise effective utilisation of resources.	1, 3B, 4
		20.3	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
		20.4	Shallow draft vessels will be used to access remote shorelines to minimise the impacts associated with seabed disturbance on approach to the shorelines	
		20.5	Shoreline access routes with the least environmental impact identified will be selected by a specialist in SCAT operations	
		20.6	Vehicular access will be restricted on dunes, turtle nesting beaches and in mangroves	

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5.7 Incident Management System (IMS)

The Incident Management System (IMS) 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 the key response planning processes detailed below (see Section 5.7.1, 5.7.2 and 5.7.3). 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 Petroleum Activity.

As the IMS does not directly remove hydrocarbons spilt into the marine environment there is no direct relationship to the response planning need.

5.7.1 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 IAP and assist the IMT with the execution of that plan. The site-based Incident Commander (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 the appropriateness of techniques to control the incident for the situation at the time.

5.7.2 Operational NEBA process

In the event of a response Woodside will confirm that the response techniques adopted at the time of 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.

5.7.3 Consultation engagement process

Woodside will consult relevant 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 relevant 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.

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5.7.4 Environmental performance based on need

Table 5-13: 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 5.8)
21	Operational SIMA	21.1	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
		21.2	Record the evidence and justification for any deviation from the planned response activities.	
		21.3	Record the information and data from operational and scientific monitoring activities used to inform the SIMA.	
22	Stakeholder engagement	22.1	Prompt and record all notifications (including government notifications) for persons/ organisations in the region are made	
		22.2	In the event of a response, identification of relevant persons/ organisations will be re-assessed throughout the response period.	
		22.3	Undertake communications in accordance with: • Functional Support Team Guideline – Reputation • External Communication and Continuous Disclosure Procedure	
23	Personnel required to support any response	23.1	Action planning is an ongoing process that involves continual review to confirm the appropriateness of techniques to control the incident are appropriate to the situation at the time.	1, 3B
		23.2	A duty roster of trained and competent people will be maintained to maintain minimum manning requirements are met all year round.	3C
		23.3	Immediately activate the CIMT with personnel filling one or more of the following roles: • CIMT Incident Commander • CIMT Deputy Incident Commander • Operations Section Chief • Planning Section Chief • Logistics Section Chief • Documentation Unit Leader • Safety Officer • Environment Unit Leader • Human Resources Officer • Public Information Officer • Situation Unit Leader • Finance Section Chief • Source Control Section Chief	1, 2, 3B, 3C, 4
		23.4	Collect and interpret information from the scene of the incident to determine support requirements to the site-based IMT, develop an IAP and assist with the execution of that plan.	
		23.5	Security and emergency management (S&EM) advisors will be integrated into CIMT to monitor performance of all functional roles.	

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Environmental Performance Outcome		To support the effectiveness of all other control measures and monitor/record the performance levels achieved.		
Control measure		Performance Standard		Measurement Criteria (Section 5.8)
		23.6	Continually communicate the status of the spill and support Woodside to determine the most appropriate response by delivering on the responsibilities of their role.	
		23.7	Follow the Hydrocarbon Spill Australia Regulatory Framework[1], Operational Plans, FSPs, support plans and the IAPs developed.	1, 2, 3A, 4
		23.8	Contribute to Woodside's response in accordance with the aims and objectives set by the Incident Commander.	1, 2, 3B, 3C, 4

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5.8 Measurement criteria for all response techniques

Woodside measures 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 Crisis and Emergency Management Standard. 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 Crisis and Emergency Management (CEM) Standard 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 IAP process formally documents and communicates 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.

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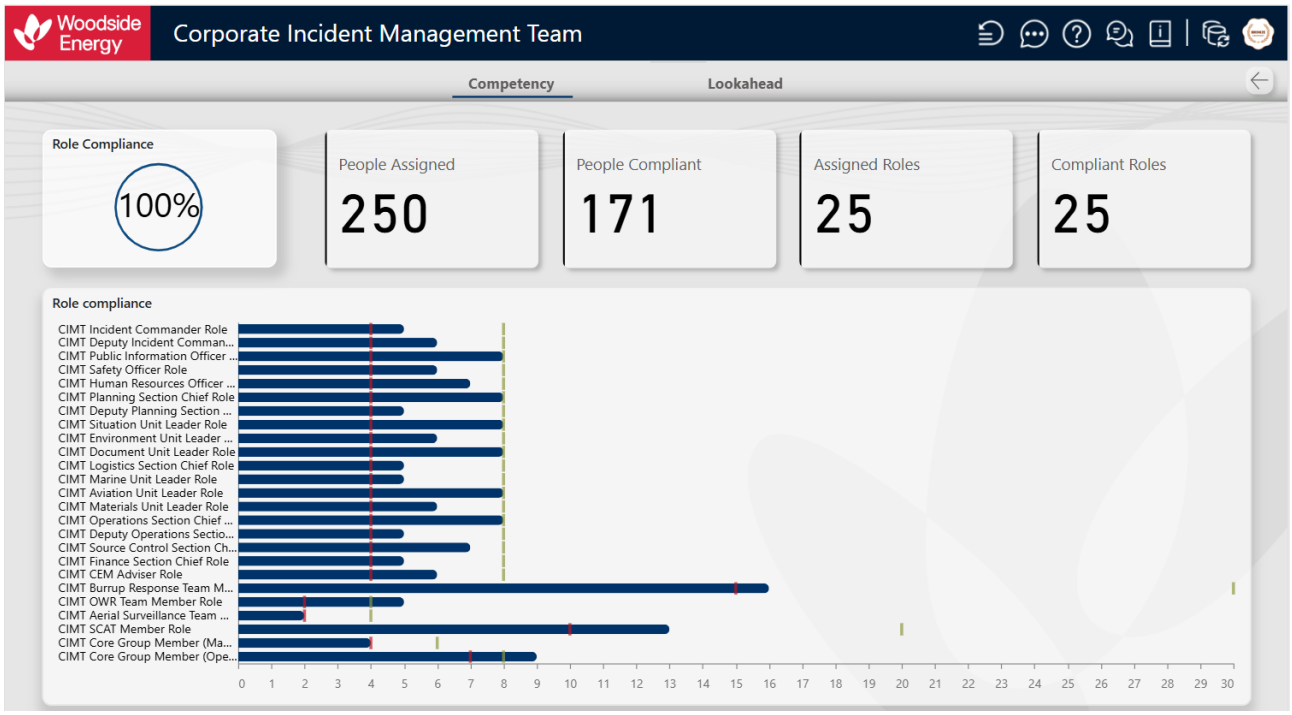


Figure 5-1: Example screenshot of the CEM dashboard

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.

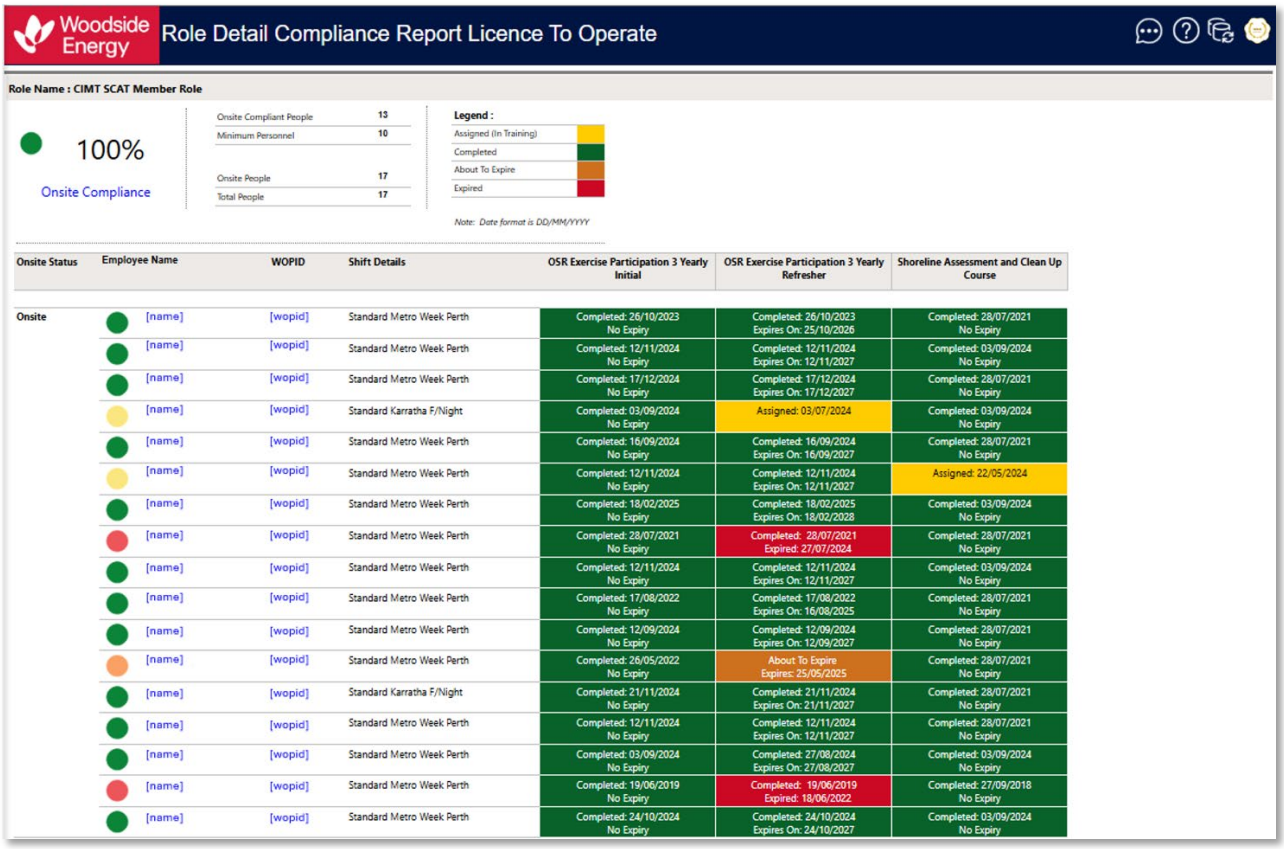


Figure 5-2: Example screenshot for the SCAT role

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Woodside also maintains a pool of trained responders which is composed of but not limited to personnel from the following organisations:

- Woodside internal
- Australian Marine Oil Spill Centre (AMOSC) core group
- AMOSC
- Oil Spill Response Limited (OSRL)
- Marine Spill Response Corporation (MSRC)
- 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:

a. Plans – confirms all plans (including: Hydrocarbon Spill Australia Regulatory Framework[1], first strike plans, operational plans, support plans and tactical response plans) are current and in line with regulatory and internal requirements.

b. Competency (personnel and testing) – confirms the competency dashboard is up to date and there are the minimum numbers across CIMT, Crisis Management Team (CMT) and hydrocarbon spill response roles. The hydrocarbon spill training plan and exercise schedule, including testing of arrangements is also tracked. The Testing of Arrangements (ToA) register tracks the testing of all hydrocarbon spill response arrangements, key contracts and agreements in place with internal and external parties to ensure compliance.

c. Capability (equipment and contracts) – tracks and monitors capability that could be required in a hydrocarbon incident, including but not limited to: integrated fleet6 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 for 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), Hydrocarbon Spill Capability and Competency Standard, and Hydrocarbon Spill Response 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 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

6 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.

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- Maintaining access to identified equipment, personnel and contracts.
- Ensuring compliance and assurance is undertaken in accordance with external and internal requirements.

The Hydrocarbon Spill Response Standard details requirements for appropriate hydrocarbon spill response standards including:

- safeguarding the safety and health of people (responders and communities)
- stopping the source of the spill as quickly as possible
- minimising the environmental and community impact

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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 5.1 with those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are clearly disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.1.1 Monitor and evaluate – Control Measure Options Analysis

6.1.1.1 Alternative Control Measures

Alternative Control Measures considered Alternative, including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
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 is approximately A$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 Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Additional personnel trained to use systems.	Current arrangement provides an environmental benefit in the availability of trained personnel facilitating access to Monitor and evaluate data used to inform all other response techniques. No improvement required.	Woodside considers no improvement can be made, all personnel in technical roles e.g. intelligence unit are trained and competent on the software systems. Personnel are trained and exercised regularly. Use of the software and systems forms part of regular work assignments and projects.	Cost for training in-house staff would be approximately A$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 and additional needs are met from Woodside-owned stocks in King Bay Supply Facility (KBSF) and Exmouth or can be provided by service provider.	Cost for an additional satellite tracking buoy would be A$200 per day or A$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. Woodside has access to a pool of trained, competent observers at strategic locations to allow timely and sustainable response. Additional observers are available through current contracts with AMOSC and OSRL.	Aviation standards and guidelines confirm all aircraft crews are competent for their roles. Woodside 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 maintain training and competency.	Cost for additional trained aerial observers would be A$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 Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
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 A$50,000 for 24-hour access plus an initial A$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

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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 (infrared, ultraviolet, 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 Safety 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 Petroleum Activity.

- Alternative: none selected
- Additional: none selected
- Improved: none selected

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6.2 Source Control via Vessel SOPEP – ALARP Assessment

Alternative, additional and improved options have been assessed against the base capability described in Section 5.2 with those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.2.1 Source Control via Vessel SOPEP – Control Measure Options Analysis

6.2.1.1 Alternative Control Measures

Alternative Control Measures considered Alternative control measures including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
No reasonably practical alternative control measures identified					

6.2.1.2 Additional Control Measures

Additional Control Measures considered Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
No reasonably practical additional control measures identified					

6.2.1.3 Improved Control Measures

Improved Control Measures considered Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
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 Petroleum Activity.

- Alternative: none selected
- Additional: none selected
- Improved: none selected

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6.3 Shoreline Clean-up – ALARP Assessment

Alternative, additional and improved options have been identified and assessed against the base capability described in Section 5.3 with those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are clearly disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.3.1 Existing Capability – Shoreline Clean-up

Woodside's exiting 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 Response planning: Browse to NWS GPGT Surveys – Shoreline Clean-up

Woodside has assessed existing capability against the WCCS and has identified that the range of techniques provide an ongoing approach to shoreline clean-up at identified RPAs. Woodside's capability can cover all required shoreline clean-up operations for the Petroleum Activity.

Modelling predicts shoreline contact at Scott Reef South (including Sandy Islet) within 0.4 days (10 hours). This is the only shoreline receptor predicted to be contacted by hydrocarbons. Maximum shoreline accumulation at Scott Reef South (including Sandy Islet) is predicted to be 80 m^3 in the worst replicate simulation (modelling predicted an average of 2 m^3 over all replicate simulations). Woodside is satisfied that the current capability is managing risks and impacts to ALARP. Relevant Tactical Response Plans available for identified RPAs are included in ANNEX D: Tactical Response Plans.

Sandy Islet is the only emergent feature at Scott Reef South, and is a sandy cay, ~640 m long and 100 m wide at its widest point. Given the small size and risk of ecological impacts from clean-up activities to Sandy Islet and surrounding intertidal reef, the islet could only accommodate one shoreline clean-up team, which would be subject to an operational NEBA at the time of the spill. For the surrounding intertidal reef system, it is likely that natural flushing and re-floating of the oil would occur with the tide. The applicability of shoreline clean-up techniques for any oil found to persistently adhere to the intertidal reef should be assessed during SCAT assessments and undergo operational NEBA.

A response planning need scenario that provides worst-case capability requirements for planning purposes is outlined below.

Woodside has identified several options which could be mobilised to achieve defined response objectives. Evaluation considers the benefit in terms of the time to respond and the scale of response made possible by each option. The evaluation of possible control measures is summarised in Section 6.3.3.

Table 6-1: Response Planning – Shoreline Clean-up

	Shoreline Clean-up (Phase 2)	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Week 2	Week 3	Week 4	Month 2	Month 3	Month 4
	Oil on shoreline (from deterministic modelling) m^3													
	Shoreline accumulation (above 100 g/m^2) – m^3	80	80	0	0	0	0	0	0	0	0	0	0	0
	Oil remaining following response operations – m^3	0	80	26	13	7	3	2	0	0	0	0	0	0
A	**Capability Required (number of operations)**													
A1	Shoreline Clean-up (SCU) operations required (lower)	9	8	3	1	1	0	0	0	0	0	0	0	0
A2	SCU operations required (upper)	0	11	4	2	1	0	0	0	0	0	0	0	0
B	**Capability Available (number of operations)**													
B1	SCU operations available – Stage 2 – Manual (lower)	0	15	15	20	20	20	20	105	105	105	560	560	560
B2	SCU operations available – Stage 2 – Manual (upper)	0	15	15	20	20	20	20	140	140	140	560	560	560
C	**Capability Gap**													
C1	SCU operations gap (lower)	9	-7	-12	-19	-19	-20	-20	-105	-105	-105	-560	-560	-560
C2	SCU operations gap (upper)	0	-4	-11	-18	-19	-20	-20	-140	-140	-140	-560	-560	-560

A1 and A2 – the number of Shoreline Clean-up operations required based on the hydrocarbon volumes ashore above 100 g/m^2

B1 and B2 – the upper and lower number of shoreline clean-up operations available (based on response planning assumptions in Section 5.3),

C1 and C2 – the gap between the upper and lower number of shoreline clean-up operations required in A1 and A2 compared to the operations available in B1 and B2. Green numbers denote where capability exceeds the need

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6.3.3 Shoreline Clean-up – Control measure options analysis

6.3.3.1 Alternative Control Measures

Alternative Control Measures considered Alternative control measures including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
No reasonably practical alternative control measures identified					

6.3.3.2 Additional Control Measures

Additional Control Measures considered Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Additional trained personnel available	The level of training and competency of the response personnel ensures the shoreline clean-up operation is delivered with minimum secondary impact to the environment. Training additional personnel does not provide an increased environmental benefit.	Additional personnel required to sustain an extended response can be sourced through the Woodside *People & Global Capability Surge Labour Requirement Plan*. Additional personnel sourced from contracted OSROs (OSRL/AMOSC) to manage other responders Response personnel are trained and exercised regularly in shoreline response techniques and methods. All personnel involved in a response will receive a full operational/safety brief prior to commencing operations.	Additional Specialist Personnel would cost A$2,000 per person per day.	This option is not adopted as the existing capability meets the need.	No
Additional trained personnel deployed	Additional personnel conducting clean-up activities may be able to complete the clean-up in a shorter timeframe, but large numbers of response personnel on Scott Reef South/Sandy Islet is likely to cause ecological impacts to this sensitive sandy cay. Managing a smaller, targeted response using less intrusive clean-up techniques is expected to achieve an environmental benefit through ensuring the shoreline clean-up response is suitable and scalable for the shoreline substrate and sensitivity type. This will ensure there is no increased impact from the shoreline clean-up through the presence of unnecessary personnel and equipment.	Personnel on site will include members with the appropriate specialties to ensure an efficient shoreline clean-up. Additional personnel are available through existing contracts with oil spill response organisations, labour hire organisations and environmental panel contractors	Additional Specialist Personnel would cost A$2,000 per person per day.	This option is not adopted as the existing capability meets the need.	No

6.3.3.3 Improved Control Measures

Improved Control Measures considered Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Faster response/ mobilisation time	Modelling predicts floating or shoreline accumulation at exposure value at day 0.4 (10 hours) at Scott Reef (CS-01) thus faster response times are not practicable.	Response teams, trained personnel, contracted oil spill response service providers, government agencies and the associated mitigation equipment required to enact an initial clean-up response will be available for mobilisation within 24–48 hours of activation. Additional equipment from existing stockpiles and oil spill response service providers can be on scene within days.	The cost of establishing a local stockpile of new shoreline clean-up equipment closer to the expected hydrocarbon stranding areas is not commensurate with the need.	This option is not adopted as additional shoreline clean-up capability is not considered practicable in the time frames prior to contact. Safety factors have also been considered, including the potential for personnel to be exposed to hydrocarbon gas vapours in the early stage of the response. Given the rapid natural weathering rate of MGO, faster mobilisation is not expected to provide a material net environmental benefit, therefore the current capability is considered to reduce the risk to ALARP.	No

6.3.4 Selected Control Measures

Following review of alternative, additional and improved control measures as outlined above, the following controls were selected for implementation for the Petroleum Activity.

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- Alternative: none selected
- Additional: none selected
- Improved: none selected

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6.4 Oiled Wildlife Response – ALARP Assessment

Alternative, additional and improved options have been identified and assessed against the base capability described in Section 5.4 with those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are clearly disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.4.1 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.

6.4.2 Oiled Wildlife Response - Control Measure Options Analysis

6.4.2.1 Alternative Control Measures

Alternative Control Measures considered Alternative control measures including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
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

6.4.2.2 Additional Control Measures

Additional Control Measures considered Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Additional wildlife treatment systems	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. 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. 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. Current capability meets the needs required and there is no additional environmental benefit in adopting the improvements.	Although hydrocarbon contact above wildlife response exposure value concentrations (≥10 g/m^2) 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. 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. Oiled wildlife response capacity would be addressed for open Commonwealth waters through the AMOSC arrangements, as informed by monitor and evaluate. The cost and organisational complexity of this approach is moderate, and the overall delivery effectiveness is high.	Additional wildlife response resources could total A$1,700 per operational site per day.	This option is not adopted as the existing capability meets the need.	No
Additional trained wildlife responders	Numbers of oiled wildlife are expected to be low in the remote offshore setting of the oiled wildlife response, given the distance from known aggregation areas. The potential environmental benefit of training additional personnel is expected to be low.	Current numbers meet the needs required and additional personnel are available through existing contracts with oil spill response organisations and environmental panel contractors. Additional equipment and facilities would be required to support ongoing response, depending on the scale of the event and the impact to wildlife and maybe sourced via existing contracts with OSROs. Materials for holding facilities, portable pools, enclosures and rehabilitation areas would be sourced as required.	Additional wildlife response personnel cost A$2,000 per person per day	This option is not adopted as the existing capability meets the need.	No

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6.4.2.3 Improved Control Measures

Improved Control Measures considered Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
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

6.4.3 Selected control measures

Following review of alternative, additional and improved control measures, the following controls were selected for implementation for the Petroleum Activity.

- Alternative: none selected
- Additional: none selected
- Improved: none selected

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6.5 Waste Management – ALARP Assessment

Alternative, additional and improved options have been identified and assessed against the base capability described in Section 5.5 with those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are clearly disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.5.1 Existing Capability – Waste Management

Woodside's exiting 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.

6.5.2 Waste Management - Control Measure Options Analysis

6.5.2.1 Alternative Control Measures

Alternative Control Measures considered Alternative control measures including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
No reasonably practical alternative control measures identified					

6.5.2.2 Additional Control Measures

Additional Control Measures considered Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
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 Petroleum Activity.	Cost for increased waste disposal capability would be ~A$1,300 per m^3. Cost for increased onshore temporary waste storage capability would be ~A$40 per unit per day.	This option is not adopted as the existing capability meets the need.	No

6.5.2.3 Improved Control Measures

Improved Control Measures considered Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
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 and transport will allow continuous response operations to occur. 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.	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

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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 Petroleum Activity.

- Alternative: none selected
- Additional: none selected
- Improved: none selected

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6.6 Operational and Scientific Monitoring – ALARP Assessment

Alternative, additional and improved options have been identified and assessed against the base capability described in Section 5.6 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.

6.6.1 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 limitation that are beyond Woodside's direct control.

6.6.2 Operational and Scientific Monitoring – Control Measure Options Analysis

6.6.2.1 Alternative Control Measures

Alternative Control Measures considered Alternative control measures including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
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 are equipped with 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 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

6.6.2.2 Additional control measures

Additional Control Measures considered Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
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 initial 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
Contract additional OSM Service Providers to increase availability of monitoring personnel in the first 2 weeks of the spill	The availability of additional monitoring personnel could theoretically increase the number of receptors and locations able to be monitored, however, the ability to deploy personnel would be subject to a range of feasibility considerations.	This option has been considered and evaluated; however, it has been discounted on the basis that deploying a significantly larger number of monitoring teams concurrently with response operations would introduce additional safety, environmental, and operational risks. The current resource assessment within Section C.4 indicates that up to 16 monitoring teams may be required during the initial 2 weeks of the response. Expanding this effort further by engaging additional contracted monitoring teams would likely result in increased simultaneous operations (SIMOPs), elevating the potential for vessel interactions, collision risks, anchoring impacts, and waste discharges, thereby increasing the overall risk profile. To ensure risk remains ALARP, a staged and scalable approach to resourcing has been adopted. Should additional monitoring capacity be required from week 3 onwards, this will be identified early	Cost to contract an additional OSM Service Provider.	The option to contract an additional OSM Service Provider to increase the number of contracted monitoring teams during the initial stages of the spill response has been assessed and found not to be reasonably practicable due to the elevated safety and environmental risks associated with SIMOPs, including vessel collisions, anchoring impacts, and waste discharges. These risks outweigh the marginal benefit of increased early-stage monitoring coverage, particularly given the scale of the existing response and monitoring deployment already planned.	No

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		through ongoing review of monitor and evaluate activities and existing monitoring efforts. Woodside will activate additional resourcing via its existing contract with the OSM Services Provider, thereby ensuring a streamlined and controlled expansion of effort. By this stage of the response, operational response activities are expected to have stabilised, reducing the likelihood and severity of SIMOPs-related risks. In addition, efficiencies may be gained by reallocating existing monitoring teams to other priority receptors where monitoring is still required, particularly in cases where termination criteria have been met at initial locations. This dynamic resourcing approach ensures that additional personnel are only deployed when necessary, thereby supporting both environmental and safety performance outcomes and maintaining ALARP principles throughout the monitoring program.			
Purchase initial water quality / hydrocarbon sampling kits for pre-positioning on nearby support vessels and develop technical procedure for sample collection	The availability of initial 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 initial water quality sampling.	Implementing this additional control measure will involve time and effort to source and supply initial 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 initial 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 Marine Fauna Assessment and Oiled Wildlife Response.	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
Conduct periodical review of existing baseline data sources across receptors predicted to be contacted within 7 days at the low exposure values and a probability ≥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 ≥ 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.	Yes

6.6.2.3 Improved Control Measures considered

Improved Control Measures considered Improved control measures, including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
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.	Yes

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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.	Yes

6.6.3 Selected Control Measures

Following review of alternative, additional and improved control measures as outlined above, the following controls were selected for implementation for the Petroleum Activity:

- Alternative: none selected
- Additional:
  - purchase 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 exposure values and a probability ³ 10%.
- Improved:
  - adopt 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.

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6.6.4 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 operational and scientific monitoring's main objectives can be met, with the adoption of three additional and one improved control measures to provide further benefit.	
Acceptability Summary	The control measures selected for implementation manage the potential impacts and risks to ALARP. In the event of a hydrocarbon spill for the Petroleum Activity, the control measures selected, meet or exceed the requirements of Woodside Management System and industry best-practice. Operational and scientific monitoring control and activities are compliant with relevant environmental legislation and regulations, including the EPBC Act. Throughout the Petroleum Activity, relevant Australian standards and codes of practice will be followed to evaluate the impacts from a loss of containment event. Stakeholder consultation undertaken for the Petroleum Activity did not receive feedback regarding concerns for Scientific Monitoring activities in response to a hydrocarbon spill. The level of impact and risk to the environment has been considered with regards to the principles of Ecologically Sustainable Development; and risks and impacts from a range of identified scenarios were assessed in detail. The control measures described consider the conservation of biological and ecological diversity, through both the selection of control measures and the management of their performance. The control measures have been developed to account for credible case scenarios, and uncertainty has not been used as a reason for postponing control measures.	
On the basis from the ALARP and acceptability summary as presented above and in Section [xx] of the 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.		

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7 ENVIRONMENTAL RISK ASSESSMENT OF SELECTED RESPONSE TECHNIQUES

The implementation of response techniques may modify the impacts and risks identified in the EP and response activities can introduce additional impacts and risks from response operations themselves. Therefore, it is necessary to complete an assessment to ensure these impacts and risks have been considered and specific measures are put in place to continually review and manage these further impacts and risks to ALARP and Acceptable levels. A simplified assessment process has been used to complete this task which covers the identification, analysis, evaluation and treatment of impacts and risks introduced by responding to the event.

7.1 Identification of impacts and risks from implementing response techniques

Each of the control measures can modify the impacts and risks identified in the EP. These impacts and risks have been previously assessed within the scope of the EP. Refer to the EP for details regarding how these risks are being managed. They are not discussed further in this document.

- Atmospheric emissions
- Routine and non-routine discharges
- Physical presence, proximity to other vessels (shipping and fisheries)
- Routine acoustic emissions vessels
- Lighting for night work/navigational safety
- Invasive marine species
- Collision with marine fauna
- Disturbance to Seabed

Additional impacts and risks associated with the control measures not included within the scope of the EP include

- Vessel operations and anchoring
- Presence of personnel on the shoreline
- Human presence (manual cleaning)
- Vegetation cutting
- Additional stress or injury caused to wildlife
- Secondary contamination from the management of waste

7.2 Analysis of impacts and risks from implementing response techniques

The table below compares the adopted control measures for this activity against the environmental values that can be affected when they are implemented.

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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		✓	✓	✓	✓	✓	✓
Shoreline clean-up	✓	✓	✓	✓	✓	✓	✓
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). 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.

Presence of personnel on the shoreline

Presence of personnel on the shoreline during shoreline operations could potentially result in disturbance to wildlife and habitats. During the implementation of response techniques, it is possible that personnel may have minimal, localised impacts on habitats, wildlife and coastlines. The impacts associated with human presence on shorelines during shoreline surveys may include:

- Damage to vegetation/habitat to gain access to areas of shoreline oiling
- Damage or disturbance to wildlife during shoreline surveys
- Removal of surface layers of intertidal sediments (potential habitat depletion)
- Excessive removal of substrate causing erosion and instability of localised areas of the shoreline.

Human presence

Human presence for manual clean-up operations may lead to the compaction of sediments and damage to the existing environment especially in sensitive locations such as turtle nesting beaches. However, any impacts are expected to be localised with full recovery expected.

Waste generation

Implementing the selected response techniques will result in the generation of the following waste streams that will require management and disposal:

- Liquids (recovered oil/water mixture), recovered from shoreline clean-up operations
- Semi-solids/solids (oily solids), collected during shoreline clean-up operations
- Debris (e.g. seaweed, sand, woods, plastics), collected during shoreline clean-up operations and oiled wildlife response.

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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 is 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 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 (Performance Standard [PS] 8.1, PS 20.3).
- Shallow draft vessels will be used to access remote shorelines to minimise the impacts associated with seabed disturbance on approach to the shorelines (PS 8.2, PS 20.4).

Presence of personnel on the shoreline

- Oversight by trained personnel who are aware of the risks (PS 8.6).
- Trained unit leader's brief personnel of the risks prior to operations (PS 8.7).

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 8.3, PS 20.5)
- Vehicular access will be restricted on dunes, turtle nesting beaches and in mangroves. (PS 8.4, PS 20.6)

Waste generation

- All shoreline clean-up sites will be zoned and marked before clean-up operations commence to prevent secondary contamination and minimise the mixing of clean and oiled sediment and shoreline substrates. (PS 6.4)
- Removal of vegetation will be limited to moderately or heavily oiled vegetation (PS 8.5)
- Teams will segregate liquid and solid wastes at the earliest opportunity (PS 14.1).

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Additional stress or injury caused to wildlife

- Oiled wildlife operations (including hazing) would be implemented with advice from the DBCA Oiled Wildlife Advisor and in accordance with the processes and methodologies described in the WA OWRP and the relevant regional plan (PS 12.1).

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8 ALARP CONCLUSION

An analysis of alternative, additional and improved control measures has been undertaken to determine their reasonableness and practicability. The tables in Section 6 document the considerations made in this evaluation. Where the costs of an alternative, additional, or improved control measure have been determined to be clearly disproportionate to the environmental benefit gained from its adoption it has been rejected. Where this is not considered to be the case the control measure has been adopted.

The risks from a hydrocarbon spill have been reduced to ALARP because:

- Woodside has a significant hydrocarbon spill response capability to respond to the WCCS through the control measures identified.
- New and modified impacts and risks associated with implementing response techniques have been considered and will not increase the risks associated with the activity.
- A consideration of alternative, additional, and improved control measures identified any other control measures that delivered proportionate environmental benefit compared to the cost of adoption for this activity ensuring that:
  - Known, reasonably practicable control measures have been adopted.
  - No additional, reasonably practicable alternative and/or improved control measures would provide further environmental benefit.
  - No reasonably practical additional, alternative, and/or improved control measure exists.
- A structured process for considering alternative, additional, and improved control measures was completed for each control measure.
- The evaluation was undertaken based on the outputs of the WCCS so that the capability in place is sufficient for all other scenario from this activity.
- The likelihood of the WCCS spill has been ignored in evaluating what was reasonably practicable.

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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

Term	Description / Definition
~	Approximately
<, ≤	Less than, less than or equal to
>, ≥	Greater then, greater than or equal to
°C	Degrees Celsius
AEP	Australian Energy Producers (formerly Australian Petroleum Production and Exploration Association [APPEA]; from 13 September 2023)
ALARP	As low as reasonably practicable; Demonstration through reasoned and supported arguments that there are no other practicable options that could reasonably be adopted to reduce risks further.
AMOP	Arctic and Marine Oil Spill Program
AMOSC	Australian Marine Oil Spill Centre
AMSA	Australian Maritime Safety Authority
APPEA	Australian Petroleum Production & Exploration Association (now Australian Energy Producers (AEP); from 13 September 2023)
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.
BAOAC	Bonn Agreement Oil Appearance Code
BC Act	Western Australian Biodiversity Conservation Act 2016
BIA	Biologically Important Area
BIP	Bridging Implementation Plan
BP	Boiling point
CEM	Crisis and Emergency Management
CERCLA	United States Comprehensive Environmental Response, Compensation, and Liability Act
CIMT	Corporate Incident Management Team (Level 2 incidents)
CMT	Crisis Management Team (Level 3 incidents)
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 Petroleum Activity.
COP	Common Operating Picture
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 Petroleum Activity.
CS	Credible scenario
cSt	Centistokes
DBCA	Western Australia Department of Biodiversity, Conservation and Attractions
DTMI	Western Australia Department of Transport and Major Infrastructure
DWH	Deepwater Horizon

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Term	Description / Definition
EMBA	Environment that May Be Affected. The summary of quantitative modelling where the marine environment could be exposed to hydrocarbons levels exceeding hydrocarbon exposure value concentrations.
EMSA	European Maritime Safety Agency
Environment Regulations	Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023
EP	Environment Plan
EPBC Act	Commonwealth Environment Protection and Biodiversity Conservation Act 1999
Exposure value	Hydrocarbon concentrations applied to the risk assessment to evaluate hydrocarbon spills
FSP	First Strike Plan
ft	Feet (non-metric distance measurement)
GPGT	Geophysical and geotechnical
HSE	Health, safety and environment
HSP	Hydrocarbon Spill Preparedness
HVLP	High volume low pressure
IAP	Incident Action Plan
IC	Incident Commander
IMO	International Maritime Organization
IMS	Incident Management System
IMT	Incident Management Team (Level 1 incidents)
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.
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
KEF	Key Ecological Feature
KGP	Karratha Gas Plant
km	Kilometre
m	Metre
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.
MGO	Marine Gas Oil
MEPC	Marine Environment Protection Committee (part of the IMO)
MGO	Marine Gas Oil
mm	Millimetre
MSA	Master Services Agreement
MSP	Monitoring Service Provider
MSRC	Marine Spill Response Corporation
NEBA	Net Environmental Benefit Analysis
NOAA	National Oceanic and Atmospheric Administration

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Term	Description / Definition
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority (Australia)
NR	Nature Reserve
NRDA	Natural Resource Damage Assessment
OILMAP	Oil Spill Model and Response System
OM	Operational Monitoring
OMP	Operational Monitoring Plan
OPEP	Oil Pollution Emergency Plan
OSCA	Oil Spill Control Agent
OSM	Operational and Scientific Monitoring
OSPRMA	Oil Spill Preparedness and Response Mitigation Assessment
OSRL	Oil Spill Response Limited
OSTM	Oil Spill Trajectory Modelling
OWR	Oiled Wildlife Response
OWRP	Oiled Wildlife Response Plan
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.
PPA	Priority Protection Area
ppb	Parts per billion
Preparedness	Measures taken before an incident in order to improve the effectiveness of a response
PS	Performance Standard
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])
Receptor areas	Geographically referenced areas such as bays, islands, coastlines and/or protected area (World Heritage Area [WHA], Commonwealth or State marine reserve or park) containing one or more receptor type.
Receptors at risk	Physical, biological and social resources identified as at risk from hydrocarbon contact using oil spill modelling predictions.
Regulator	NOPSEMA are the Environment Regulator under the Environment Regulations.
Reliability	The probability that at any point in time a control measure will operate correctly for a further specified length of time.
Response technique	The key priorities and objectives to be achieved by the response plan Measures taken in response to an event to reduce or prevent adverse consequences.
RPA	Response Protection Area
S&EM	Security and Emergency Management
SCAT	Shoreline Clean-up Assessment Techniques
SCU	Shoreline clean-up

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Term	Description / Definition
SHP-MEE	State Hazard Plan – Maritime Environmental Emergencies
SIMA	Spill Impact Mitigation and Assessment
SIMAP	Integrated Oil Spill Impact Model System
SIMOPS	Simultaneous operations
SMP	Scientific Monitoring Plan
SOPEP	Shipboard Oil Pollution Emergency Plan
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.
ToA	Testing of Arrangements
TRP	Tactical Response Plan
UAS	Unmanned Aerial System
UAV	Unmanned Aerial Vehicle
UK	United Kingdom
VOC	Volatile Organic Compound
WA	Western Australia
WAOWRP	WA Oiled Wildlife Response Plan
WCCS	Worst Case Credible Scenario
WHA	World Heritage Area
Woodside	Woodside Energy Limited

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ANNEX A: NET ENVIRONMENTAL BENEFIT ANALYSIS DETAILED OUTCOMES

A NEBA has been conducted to assess the net environmental benefit of different response techniques to selected receptors in the event of an MGO spill from the Petroleum Activity for CS-01. The complete list of potential receptor locations within the EMBA for the Petroleum Activity is included in Section 6.9 of the EP.

The locations used for the NEBA were limited to the identified RPAs of the Petroleum Activity identified from modelling (see Section 3 for outline of selection). These include receptors which have potential for the following:

- Surface contact (>50 g/m^2) – no contact predicted at any RPA at any time
- Surface contact (>10 g/m^2 for potential oiled wildlife response)
- Shoreline accumulation (>100 g/m^2)

The detailed NEBA assessment outcomes are shown below. The Petroleum Activity preoperational NEBAs contains the full assessments.

Table A-1: NEBA assessment technique recommendations for MGO vessel collision (CS-01)

Receptor	Monitor and evaluate	Containment and recovery	Dispersant application: sub-sea	Dispersant application: >20 m water depth and >10 km from shore/reefs	Shoreline protection	Shoreline clean-up (manual)	Shoreline clean-up (mechanical)	Shoreline clean-up (chemical)	Oiled wildlife response	In situ burning	Mechanical dispersion	Source control (via vessel SOPEP)
Scott Reef North*	Yes	No	N/A	No	N/A	N/A	N/A	N/A	Yes	No	No	Yes
Scott Reef South	Yes	No	N/A	No	No	Yes	No	No	Yes	No	No	Yes
Sandy Islet	Yes	No	N/A	No	No	Yes	No	No	Yes	No	No	Yes
Seringapatam Reef*	Yes	No	N/A	No	N/A	N/A	N/A	N/A	Yes	No	No	Yes

** Oil spill modelling predicted this receptor only to be contacted by floating hydrocarbons >10 g/m^2 for consideration of oiled wildlife response*

Overall assessment

Sensitive receptor (sites identified in EP)	Monitor and evaluate	Containment and recovery	Dispersant application: sub-sea	Dispersant application: >20 m water depth and >10 km from shore/reefs	Shoreline protection	Shoreline clean-up (manual)	Shoreline clean-up (mechanical)	Shoreline clean-up (chemical)	Oiled wildlife response	In situ burning	Mechanical dispersion	Source control (via vessel SOPEP)
Is this response practicable?	Yes	No	N/A	No	No	Potentially	No	No	Yes	No	No	Yes
NEBA identifies response potentially of net environmental benefit?	Yes	No	N/A	No	No	Potentially	No	No	Yes	No	No	Yes

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NEBA Impact Ranking Classification Guidance

To reduce variability between assessments, the following ranking descriptions have been devised to guide the workshop process:

			Degree of impact7	Potential duration of impact	Equivalent Woodside Corporate Risk Matrix Consequence Level
Positive	3P	Major	Likely to prevent: • behavioural impact to biological receptors • behavioural impact to socio-economic receptors e.g. changes to day-today business operations, public opinion/behaviours (e.g. avoidance of amenities such as beaches) or regulatory designations.	Decrease in duration of impact by > 5 years	N/A
	2P	Moderate	Likely to prevent: • significant impact to a single phase of reproductive cycle of biological receptors • detectable financial impact, either directly (e.g. loss of income) or indirectly (e.g. via public perception), for socio-economic receptors.	Decrease in duration of impact by 1–5 years	N/A
	1P	Minor	Likely to prevent impacts on: • significant proportion of population or breeding stages of biological receptors • socio-economic receptors such as: - significant impact to the sensitivity of protective designation; or - significant and long-term impact to business/industry.	Decrease in duration of impact by several seasons (< 1 year)	N/A
	0	Non-mitigated spill impact	No detectable difference to unmitigated spill scenario.		
Negative	1N	Minor	Likely to result in: • behavioural impact to biological receptors • behavioural impact to socio-economic receptors e.g. changes to day-to-day business operations, public opinion/behaviours (e.g. avoidance of amenities such as beaches), or regulatory designations.	Increase in duration of impact by several seasons (< 1 year)	Increase in risk by one sub-category, without changing category (e.g. Minor (E) to Minor (D))
	2N	Moderate	Likely to result in: • significant impact to a single phase of reproductive cycle for biological receptors; or • detectable financial impact, either directly (e.g. loss of income) or indirectly (e.g. via public perception), for socio-economic receptors. This level of negative impact is recoverable and unlikely to result in closure of business/industry in the region.	Increase in duration of impact by 1–5 years	Increase in risk by one category (e.g. Minor (D) to Moderate (C or B))
	3N	Major	Likely to result in impacts on: • significant proportion of population or breeding stages of biological receptors • socio-economic receptors resulting in either: - significant impact to the sensitivity of protective designation; or - significant and long-term impact to business/industry.	Increase in duration of impact by > 5 years or unrecoverable	Increase in risk by two categories (e.g. Minor (E) to Major (A))

.

7 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

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ANNEX B: MONITOR AND EVALUATE ACTIVATION AND TERMINATION CRITERIA

Table B-1: Monitor and evaluate objectives, triggers and termination criteria

Operational Monitoring Operational Plan	Objectives	Activation triggers	Termination criteria
Predictive Modelling of Hydrocarbons to Assess Resources at Risk	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. The objectives of predictive modelling are to: • Provide forecasting of the movement and weathering of spilled hydrocarbons • Identify resources that are potentially at risk of contamination • Provide simulations showing the outcome of alternative response options (booming patterns etc.) to inform on-going Net Environmental Benefit Analysis (NEBA) and continually assess the efficacy of available response options in order to reduce risks to ALARP	• Predictive modelling will be triggered immediately following a level 2/3 hydrocarbon spill.	• The criteria for the termination of predictive modelling are: • The hydrocarbon discharge has ceased and no further surface oil is visible • Response activities have ceased • Hydrocarbon spill modelling (as verified by surveillance observations) predicts no additional natural resources will be impacted
Surveillance and reconnaissance to detect hydrocarbons and resources at risk	Surveillance and reconnaissance aims to provide regular, on-going hydrocarbon spill surveillance throughout a broad region, in the event of a spill. The objectives of surveillance and reconnaissance are: • Verify spill modelling results and recalibrate spill trajectory models. • Understand the behaviour, weathering and fate of surface hydrocarbons. • Identify environmental receptors and locations at risk or contaminated by hydrocarbons. • Inform ongoing Net Environmental Benefit Analysis (NEBA) and continually assess the efficacy of available response options in order to reduce risks to ALARP. • To aid in the subsequent assessment of the short- to long-term impacts and/or recovery of natural resources (assessed in SMPs) by ensuring that the visible cause and effect relationships between the hydrocarbon spill and its impacts to natural resources have been observed and recorded during the operational phase.	• Surveillance and reconnaissance will be triggered immediately following a level 2/3 hydrocarbon spill.	• The termination triggers for the Surveillance and reconnaissance are: • 72 hours has elapsed since the last confirmed observation of surface hydrocarbons. • Latest hydrocarbon spill modelling results do not predict surface exposures at visible levels.

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Operational Monitoring Operational Plan	Objectives	Activation triggers	Termination criteria
Pre-emptive assessment of sensitive receptors at risk	• 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. • 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. • 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. • Pre-emptive shorelines assessment would be undertaken in liaison with WA DTMI as the control agency once the oil is in State Waters (if a Level 2/3 incident).	• Triggers for commencing pre-emptive shorelines assessment include: • Contact of a sensitive habitat or shoreline is predicted by predictive modelling and surveillance. • 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.	• The criteria for the termination of pre-emptive shorelines assessment at any given location are: • Locations predicted to be contacted by hydrocarbons have been contacted. • The location has not been contacted by hydrocarbons and is no longer predicted to be contacted by hydrocarbons (resources should be reallocated as appropriate).

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ANNEX C: PETROLEUM ACTIVITY OSM ACTIVITY SPECIFIC REQUIREMENT AND VERIFICATION OF OSM-BIP ADEQUACY

The Woodside OSM-BIP comprehensively presents important information for OSM assessment and implementation, including the process for assessing OSM requirements for each activity. This Annex provides the activity-specific information required for the Browse Geophysical and Geotechnical Surveys – Commonwealth (hereafter referred to as the Petroleum Activity) OSM Assessment, including:

- OSM Planning Area
- Monitoring priorities
- Mobilisation and implementation timeframes
- Resourcing requirements and capability assessment.

C.1 Determine if the activity OSM Planning Area fits within the Combined OSM Planning Area

The OSM Planning Area for the Petroleum Activity credible spill scenarios (as shown in Figure C - 1) fits within the Combined OSM Planning Area (Figure 2-1 in the OSM-BIP).

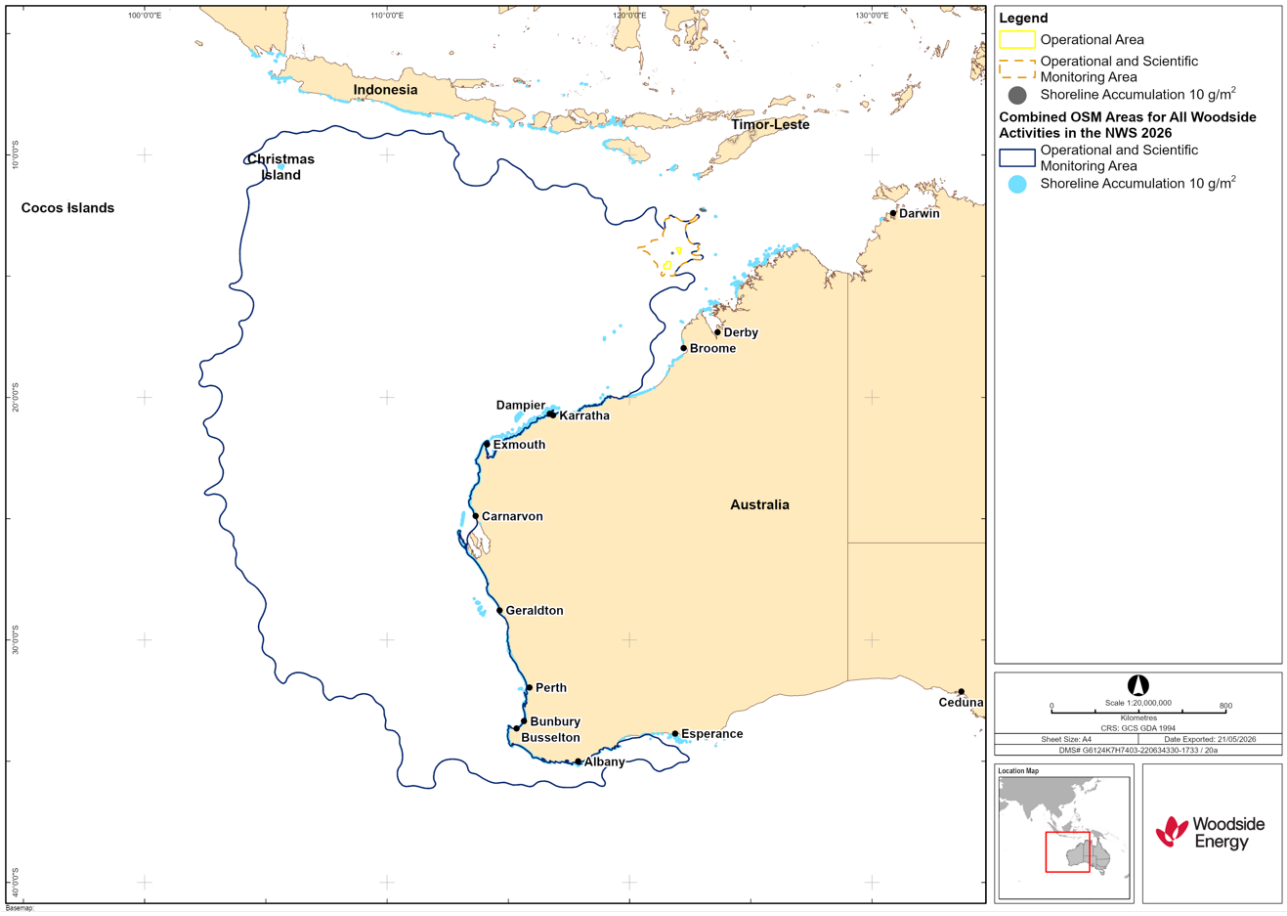


Figure C - 1: Petroleum Activity OSM Planning Area based on the area potentially contacted by the low (below ecological impact) hydrocarbon exposure values in the event of the worst-case credible spill scenarios (CS-01 and CS-02)

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C.2 Determine activity-specific monitoring priorities

The monitoring priorities for the Petroleum Activity have been identified through application of the tiered prioritisation hierarchy described in Section 2.2 of the Woodside OSM-BIP to the stochastic oil spill modelling results for the two WCCS spill scenarios: CS-01 – Vessel collision of 200 m^3 of MGO at Operational Area A; and CS-02 – Vessel collision of 200 m^3 of MGO at Operational Area B.

Floating oil and shoreline accumulation stochastic outputs at the three tier exposure values for both scenarios are presented in Table 2-5. Entrained and dissolved outputs are presented in Table C - 1 (CS-01) and Table C - 2 (CS-02). As the credible spill is a 200 m³ MGO vessel release, monitoring priorities are concentrated at the Scott Reef complex; no receptor beyond it reaches a monitoring tier.

Initial monitoring priorities (within the first 14 days of a spill)

Each receptor identified in Table C - 1 and Table C - 2 has been assigned a base monitoring tier by applying the base tier criteria in Table 2-2 of the OSM-BIP to the highest exposure value predicted across the floating, shoreline, entrained and dissolved hydrocarbon phases within 14 days at a probability ≥10%. The base tier has then been refined, where warranted, by applying the additional monitoring prioritisation criteria in Table 2-3 of the OSM-BIP (Section 2.2.3): receptor sensitivity (the Western Australian DTMI ranking), vulnerability to the predicted exposure pathway, and baseline data adequacy, following the decision logic in Figure 2-2 of the OSM-BIP. The resultant base tier, the additional criteria applied and the refined initial monitoring priority for each receptor are presented in Table C - 4 (CS-01) and Table C - 5 (CS-02). The geographic extent of the Tier 1, Tier 2 and Tier 3 stochastic exposure areas for CS-01 within the 14-day initial prioritisation window is illustrated in Figure C - 2.

Broad-scale ecological features that intersect a receptor (including Key Ecological Features (KEFs), Biologically Important Areas (BIAs) and Australian Marine Parks (AMPs)) are embedded in that receptor's Western Australian DTMI sensitivity ranking and are therefore considered in the prioritisation without being listed separately as monitoring priorities. Where such features, or transient and protected species, extend beyond the named-receptor footprint, they are captured in the monitoring units described in Section C.4 (Table C - 7).

For CS-01 (Operational Area A), two receptors are classified as Tier 1 initial monitoring priorities and three as Tier 3 priorities (Table C - 4); no receptor reaches Tier 2. The Tier 1 receptors are Scott Reef North and Scott Reef South, driven by predicted entrained hydrocarbon exposure at ≥1,000 ppb within 14 days (15% and 10.5% probability of contact respectively); floating oil exposure at ≥50 g/m² is also predicted at Scott Reef North (100% probability), reflecting its proximity to the release location. Each receptor's refined initial monitoring priority equals its base tier; no promotion was warranted under the additional monitoring prioritisation criteria, as the Tier 3 receptors are contacted by entrained hydrocarbons alone.

For CS-02 (Operational Area B), no receptors are classified as Tier 1 or Tier 2 initial monitoring priorities; all five contacted receptors - Scott Reef North, Scott Reef South, Scott Reef Nature Reserve, Sandy Islet and Seringapatam Reef - are classified as Tier 3 (Table C - 5). Each is contacted within 14 days by entrained hydrocarbons at ≥10 ppb only. No promotion was warranted under the additional monitoring prioritisation criteria. The absence of higher-tier receptors for CS-02 relative to CS-01 reflects the lower predicted exposure at the Scott Reef complex from the Operational Area B release location.

The tier rankings presented in Table C - 4 and Table C - 5 are pre-spill, modelling-derived classifications. Because these priorities are derived from stochastic modelling, which combines the full range of possible spill trajectories across many simulation runs, not all of the listed receptors may be contacted by a single spill event. At the time of a spill, Woodside, its OSM Services Provider/s and key stakeholders will confirm the initial tier ranking for each receptor and adapt it through continual re-evaluation as the spill evolves and actual exposure data becomes available (refer to Section 13 and Section 18.1 of the OSM-BIP).

Receptors identified as RPAs in Section 3 of this OSPRMA (Table 3-1) are included in Table C - 4 and Table C - 5 only where they are contacted at a probability ≥10% within 14 days. RPA status is recorded in the 'Additional monitoring prioritisation criteria' column of these tables for completeness only; it is not an additional monitoring prioritisation criterion and does not promote or demote a receptor's tier. Where shoreline contact is predicted only beyond the 14-day window, phased operational monitoring mobilisation is aligned with the predicted arrival of the spill (Section 2.2.5 of the OSM-BIP).

The availability and adequacy of baseline data for the receptors identified as initial monitoring priorities has been assessed against the parameters and methods of the relevant Joint Industry Scientific Monitoring Plans (SMPs). This activity-specific baseline data assessment is presented in Table C - 3. Consistent with Section

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2.2.3 of the OSM-BIP, the baseline data assessment was considered as one of the additional monitoring prioritisation criteria. Where baseline data for a receptor and its relevant monitoring program(s) is limited or absent, this supports the prioritisation of that receptor for scientific monitoring and informs the design of any reactive (post-spill, pre-contact) baseline data collection at the time of a spill.

Tier 1 or Tier 2 monitoring would be initiated if situational awareness data and/or surveillance during an actual spill identifies exposure at a receptor, as per the dynamic re-evaluation process in Sections 13 and 18 of the OSM-BIP. Therefore, Woodside and its OSM Services Provider/s will still activate and mobilise monitoring resources to Tier 3 receptors in the absence of any higher ranked receptors.

The inclusion of entrained hydrocarbons at concentrations at or above the 10 ppb exposure value denotes exposure but does not necessarily imply toxicity; for entrained whole-oil droplets, the toxic fraction is small as many hydrocarbon constituents remain sequestered and not bioavailable (French-McCay, 2026). Where a receptor is contacted only by the lowest concentration of entrained hydrocarbons and not by any other hydrocarbon phase, it has been assigned to Tier 3, with the rationale recorded in Table C - 4 and Table C - 5.

Receptors contacted beyond the 14-day initial prioritisation window

A beyond 14-day receptor assessment is not undertaken on an activity-specific basis for the Petroleum Activity (as per OSM-BIP Section 2.2.4). Receptors observed or predicted to be contacted beyond the 14-day initial prioritisation window during a spill are added to the monitoring scope through the post-spill continual re-evaluation process described in OSM-BIP Section 18 (Use of Data in Response Decision-making). Tier assignment at the time of predicted or observed beyond-14-day contact is undertaken by the Woodside Environment Unit Leader (or delegate) in consultation with the OSM Services Provider and key stakeholders using the same tier framework in OSM-BIP Section 2.2.

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Table C - 1: Petroleum Activity credible spill scenario (CS-01) – entrained and dissolved stochastic modelling results for receptors with a probability of contact ≥10% and <14 days

Receptor	Probability (%) entrained oil at ≥10 ppb	Min. arrival time entrained oil ≥10 ppb (days)	Probability (%) entrained oil at ≥1,000 ppb	Min. arrival time entrained oil ≥1,000 ppb (days)	Probability (%) dissolved oil at ≥10 ppb	Min. arrival time dissolved oil ≥10 ppb (days)	Probability (%) dissolved oil at ≥50 ppb	Min. arrival time dissolved oil ≥50 ppb (days)	Probability (%) dissolved oil at ≥300 ppb	Min. arrival time dissolved oil ≥300 ppb (days)
Scott Reef NR	31	0.12	3.5	0.21	3	0.21	<0.5	NC	<0.5	NC
Sandy Islet	33.5	0.21	1.5	0.25	1.5	0.25	<0.5	NC	<0.5	NC
Scott Reef North	50	0.04	15	0.04	9	0.04	1.5	0.04	<0.5	NC
Scott Reef South	45	0.04	10.5	0.04	5.5	0.04	0.5	0.04	<0.5	NC
Seringapatam Reef	24.5	0.92	<0.5	NC	0.5	1.04	<0.5	NC	<0.5	NC
Key										
NC	No contact predicted									

Table C - 2: Petroleum Activity credible spill scenario (CS-02) – entrained and dissolved stochastic modelling results for receptors with a probability of contact ≥10% and <14 days

Receptor	Probability (%) entrained oil at ≥10 ppb	Min. arrival time entrained oil ≥10 ppb (days)	Probability (%) entrained oil at ≥1,000 ppb	Min. arrival time entrained oil ≥1,000 ppb (days)	Probability (%) dissolved oil at ≥10 ppb	Min. arrival time dissolved oil ≥10 ppb (days)	Probability (%) dissolved oil at ≥50 ppb	Min. arrival time dissolved oil ≥50 ppb (days)	Probability (%) dissolved oil at ≥300 ppb	Min. arrival time dissolved oil ≥300 ppb (days)
Scott Reef NR	26.5	0.46	2	0.50	1.5	0.50	<0.5	NC	<0.5	NC
Sandy Islet	14	1.62	<0.5	NC	0.5	2.42	<0.5	NC	<0.5	NC
Scott Reef North	21	0.83	0.5	0.92	0.5	2.38	<0.5	NC	<0.5	NC
Scott Reef South	28	0.38	3	0.42	2	0.42	<0.5	NC	<0.5	NC
Seringapatam Reef	13	1.54	<0.5	NC	0.5	5.79	<0.5	NC	<0.5	NC
Key										
NC	No contact predicted									

Table C - 3: Baseline data assessment versus SMPs for receptors predicted at being contacted ≥10% probability and <14 days

Receptor	SM1: Water quality impact	SM2: Sediment quality impact	SM3: Intertidal and coastal habitat	SM4: Seabirds and shorebirds	SM5: Marine megafauna – reptiles	SM5: Marine megafauna – whale sharks, dugong and cetacean	SM6: Benthic habitat	SM7: Marine fish and elasmobranch assemblages	SM8: Fisheries impact	SM9 & 10: Heritage and social impact
Scott Reef (encompasses Scott Reef North, South, Sandy Islet, Scott Reef NR and Seringapatam Reef)									(Locations to be determined in consultation with key stakeholders to reflect current fishing zones/effort)	(Locations to be determined in consultation with key stakeholders)

Key	
	No baseline data available, or existing data are inadequate in quality, scope, or relevance. Caveat: Additional relevant data may exist but be unknown and therefore not included in the assessment.
	Comprehensive baseline data or ongoing monitoring collected within the last 5 years. Data align with Joint Industry SMP parameters and methods, cover required species/communities and span the necessary spatial extent.
	Historical data (>5 years old) that remain of value, or some current but not extensive baseline data. Caveat: Additional relevant data may exist but be unknown and therefore not included in the assessment.
N/A	Not applicable as the receptor is submerged

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Table C - 4: CS-01 Monitoring priority assessment (stochastic modelling results, 10% probability, ≤14 days; source RPS, 2026)

Receptor	Receptor type	DTMI (Floating)	DTMI (Dissolved)	Base tier – floating (%, time)	Base tier – shoreline (%, time)	Base tier – entrained (%, time)	Base tier – dissolved (%, time)	Resultant base tier	Additional monitoring prioritisation criteria	Initial Monitoring Priority
Scott Reef North	Submerged	4	4	High (100%, 0 d 1 h)	n/a (submerged)	High ≥1,000 ppb (15%, 0 d 1 h)	n/a	Tier 1	Submerged reef - Tier 1 driven by floating ≥50 g/m² and entrained ≥1,000 ppb	Tier 1 – high monitoring priority
Scott Reef South	Emergent	4	4	Moderate (16%, 0 d 1 h)	n/a	High ≥1,000 ppb (10%, 0 d 1 h)	n/a	Tier 1	Emergent receptor - RPA as per Table 3-1. Tier 1 driven by entrained ≥1,000 ppb	Tier 1 – high monitoring priority
Sandy Islet	Emergent	4	4	n/a	n/a	Low ≥10 ppb (34%, 0 d 5 h)	n/a	Tier 3	Emergent receptor (part of Scott Reef South) - RPA as per Table 3-1. Contacted by entrained hydrocarbons ≥10 ppb only; lower monitoring priority (entrained-only, OSM-BIP Section 2.2)	Tier 3 – low monitoring priority
Scott Reef NR	Emergent	4	4	n/a	n/a	Low ≥10 ppb (31%, 0 d 3 h)	n/a	Tier 3	Contacted by entrained hydrocarbons ≥10 ppb only; lower monitoring priority (entrained-only, OSM-BIP Section 2.2)	Tier 3 – low monitoring priority
Seringapatam Reef	Submerged	4	4	n/a	n/a (submerged)	Low ≥10 ppb (24%, 0 d 22 h)	n/a	Tier 3	Submerged reef: low entrained-only exposure (French-McCay, 2026)	Tier 3 – low monitoring priority

Table C - 5: CS-02 Monitoring priority assessment (stochastic modelling results, 10% probability, ≤14 days; source RPS, 2026)

Receptor	Receptor type	DTMI (Floating)	DTMI (Dissolved)	Base tier – floating (%, time)	Base tier – shoreline (%, time)	Base tier – entrained (%, time)	Base tier – dissolved (%, time)	Resultant base tier	Additional monitoring prioritisation criteria	Initial Monitoring Priority
Sandy Islet	Emergent	4	4	n/a	n/a	Low ≥10 ppb (14%, 1 d 15 h)	n/a	Tier 3	RPA status: emergent feature - confirm against RPA list (Section 3). Contacted by entrained hydrocarbons ≥10 ppb only; lower monitoring priority (entrained-only, OSM-BIP Section 2.2).	Tier 3 – low monitoring priority
Scott Reef NR	Emergent	4	4	n/a	n/a	Low ≥10 ppb (26%, 0 d 11 h)	n/a	Tier 3	RPA status: emergent feature - confirm against RPA list (Section 3). Contacted by entrained hydrocarbons ≥10 ppb only; lower monitoring priority (entrained-only, OSM-BIP Section 2.2).	Tier 3 – low monitoring priority
Scott Reef North	Submerged	4	4	n/a	n/a (submerged)	Low ≥10 ppb (21%, 0 d 20 h)	n/a	Tier 3	RPA status: not an RPA (submerged reef - monitoring via OM2/OM3/SM6/SM7).	Tier 3 – low monitoring priority
Scott Reef South	Emergent	4	4	n/a	n/a	Low ≥10 ppb (28%, 0 d 9 h)	n/a	Tier 3	RPA status: emergent feature - confirm against RPA list (Section 3). Contacted by entrained hydrocarbons ≥10 ppb only; lower monitoring priority (entrained-only, OSM-BIP Section 2.2).	Tier 3 – low monitoring priority
Seringapatam Reef	Submerged	4	4	n/a	n/a (submerged)	Low ≥10 ppb (13%, 1 d 13 h)	n/a	Tier 3	RPA status: not an RPA (submerged reef - monitoring via OM2/OM3/SM6/SM7).	Tier 3 – low monitoring priority

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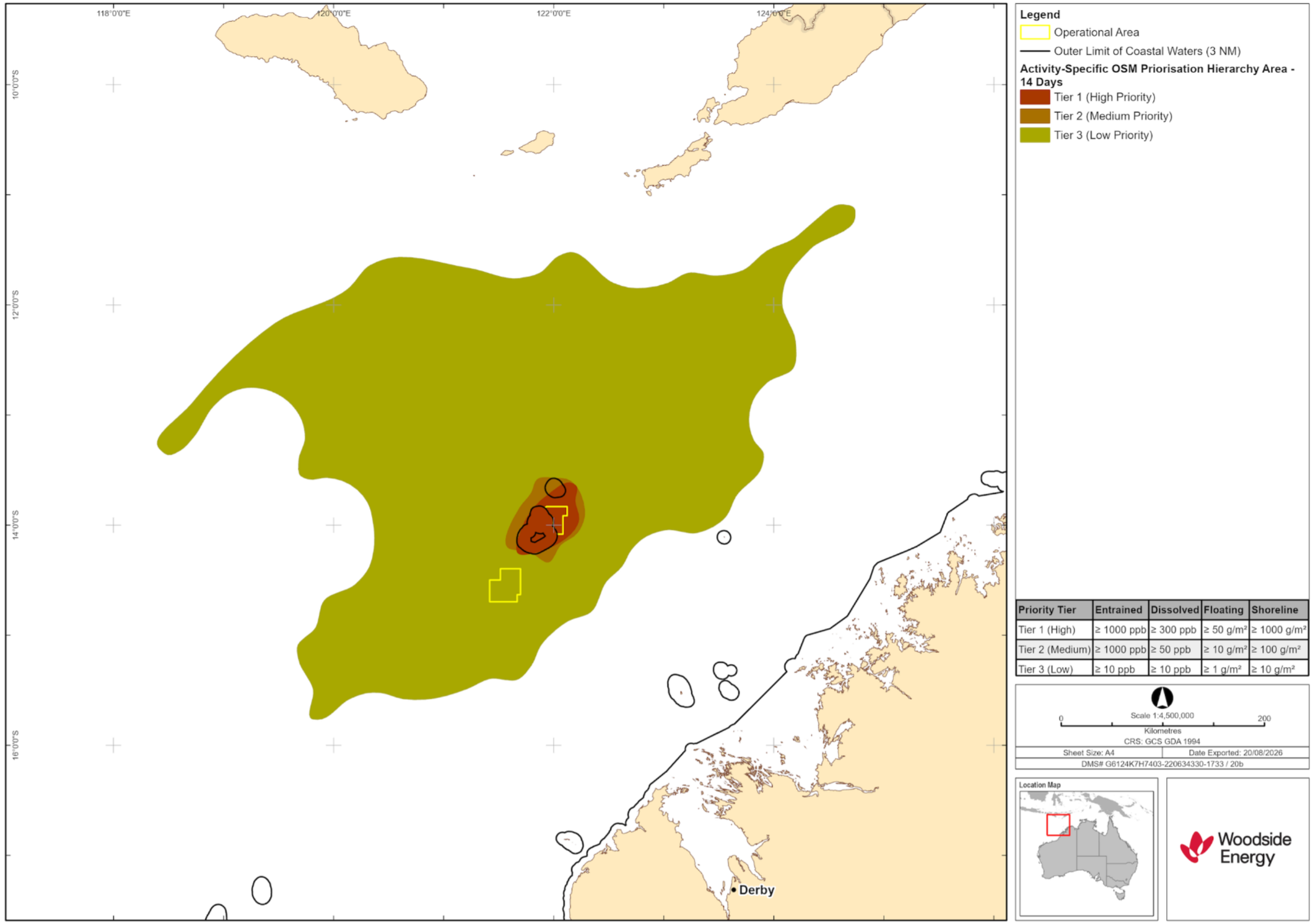


Figure C - 2: Geographical extent of the tiered stochastic exposure areas – CS-01 within the 14-day initial prioritisation window

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C.3 Mobilisation and timing of OMP and SMP implementation

Table C - 6provides a list of OMPs and SMPs relevant to Petroleum Activity activities, as well as indicative timeframes for mobilisation of each OMP and SMP for key receptors. In addition, monitor and evaluate activities will capture initial observations of fauna, habitat, and other sensitive receptors. Water samples will be collected during vessel surveillance for OM1: Hydrocarbon Characterisation, when safe to do so. SCAT teams will begin mobilisation within 48–72 hours of notification and will also document fauna observations. This information will be provided to the IMT to aid early decision making per the process outlined in Section 18.1 of the OSM-BIP.

Table C - 6: Indicative OMP and SMP implementation schedule for OSM activities if initiation criteria are met

Proximity to spill source	Monitoring type	0–48 hours from OSM activation	Within 72 hours of OSM activation	~5–7 days from OSM activation	Weeks 1–2 from OSM activation	Ongoing
Spill site and surrounding waters	OM	• Activation of OMP Team Leads. • Finalise OMPs. • Aerial surveillance – which will also document fauna observations. • Commence activation and mobilisation of OM personnel.	• OM1: Hydrocarbon Characterisation, where resources are available (e.g. Supply Vessel with onboard sampling equipment). • OM2: Hydrocarbons in Water Assessment • OM3: Hydrocarbons in Sediment Assessment • OM5: Rapid Marine Fauna Surveillance • Continue to finalise OMPs. • Continue to activate and mobilise OM personnel.	Continued (as per ongoing arrangements)	Continued (as per ongoing arrangements)	As results from implemented OMPs are available, data are provided to relevant personnel in IMT (e.g. Situation Unit) and used in the Incident Action Planning process for the next operational period. OMP is redesigned or reallocated according to the specifics of the actual spill.
	SM	• Commence activation and mobilisation process. • Activation of SMP Team Leads.	• Continue to activate and mobilise personnel. • Work on finalising SMPs.	• SM1: Water Quality Impact Assessment • SM2: Sediment Quality Impact Assessment • SM6: Benthic Habitat Assessment • SM7: Marine fish and elasmobranch assemblages assessment	Continued	Continue SMP monitoring until termination criteria are met
Sensitive receptors predicted to be contacted within 7 days	OM	• Activation of OMP Team Leads. • Finalise OMPs. • Aerial surveillance – which will also document fauna observations. • OM6: Shoreline Clean-up Assessment • Commence activation and mobilisation of OM personnel.	• OM1: Hydrocarbon Characterisation • OM2: Hydrocarbons in Water Assessment • OM3: Hydrocarbons in Sediment Assessment • OM5: Rapid Marine Fauna Surveillance • Continue to finalise OMPs. • Continue to activate and mobilise OM personnel.	Continued (as per on-going arrangements)	Continued (as per on-going arrangements)	As results from implemented OMPs are available, data are provided to relevant personnel in IMT (Situation Unit Lead) and used in the Incident Action Planning process for the next operational period. OMP is redesigned or reallocated according to the specifics of the actual spill until termination criteria are met
	SM	• Activation of SMP Team Leads and finalisation of SMPs.	• Continue to activate and mobilise personnel. • Work on finalising SMPs.	• SM1: Water Quality Impact Assessment • SM2: Sediment Quality Impact Assessment • SM4: Seabirds and Shorebirds • SM3: Intertidal and Coastal Habitat Assessment • SM5: Marine Mega-fauna Assessment – Reptiles • SM5: Marine Mega-fauna Assessment – Cetaceans, Whale Sharks, Dugong • SM6: Benthic Habitat Assessment • SM7: Marine Fish and Elasmobranch Assemblages assessment • SM8: Fisheries impact assessment • SM9: Heritage Features Assessment • SM10: Social Impact Assessment	Continued	Continue SMP implementation until termination criteria are met.
Sensitive receptors (including shorelines, reefs, banks and shoals) predicted to be contacted week 1–2	OM	–	–	• Additional Activation of OMP Team Leads. • Commence activation and mobilisation of additional OM personnel.	• Continue to finalise OMPs. • Continue to activate and mobilise OM personnel. • OM1: Hydrocarbon Characterisation • OM2: Hydrocarbons in Water Assessment • OM3: Hydrocarbons in Sediment Assessment	As results from implemented OMPs are available, data are provided to relevant personnel in IMT (Situation Unit Leader) and used in the Incident Action Planning process for the next operational period. OMP is redesigned or reallocated according to the specifics of the actual spill until termination criteria are met

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Proximity to spill source	Monitoring type	0–48 hours from OSM activation	Within 72 hours of OSM activation	~5–7 days from OSM activation	Weeks 1–2 from OSM activation	Ongoing
					• OM5: Rapid Marine Fauna Surveillance • OM6: Shoreline Clean-up Assessment	
	SM	–	–	• Additional Activation of SMP Team Leads. • Commence activation and mobilisation of additional SM personnel.	• SM1: Water Quality Impact Assessment • SM2: Sediment Quality Impact Assessment • SM3: Intertidal and Coastal Habitat Assessment • SM4: Seabirds and Shorebirds • SM5: Marine Mega-fauna Assessment – Reptiles • SM5: Marine Mega-fauna Assessment – Cetaceans, Whale Sharks, Dugong • SM6: Benthic Habitat Assessment • SM7: Marine Fish and Elasmobranch Assemblages assessment • SM8: Fisheries impact assessment • SM9: Heritage Features Assessment • SM10: Social Impact Assessment	Continue SMP monitoring until termination criteria are met

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C.4 Determine OSM resourcing requirements and assess capability for the activity

To guide the OSM resourcing requirements assessment for the Petroleum Activity, the scenario most likely to require the greatest initial capability was selected from the two WCCS scenarios (see) based on the stochastic modelling results focusing on the scenario with the greatest predicted number of receptors contacted within 14 days and at the highest contact probabilities. If a receptor is only contacted by low concentrations of entrained hydrocarbons and not by any other hydrocarbon phase, it will be considered a lower priority during the initial monitoring response as outlined in Section 2.2 of the OSM-BIP.

The instantaneous release of 200 m^3 of MGO at Operational Area A (CS-01) was identified as the worst-case scenario, affecting the most receptors within 14 days and determined to require the greatest OSM capability.

The tier rankings in Section C.2 (Table C - 4 and Table C - 5) are derived from the stochastic suite and reflect each receptor's overall risk profile across the full range of modelled trajectories. In any single spill trajectory, a receptor may or may not be contacted within 14 days depending on the prevailing metocean and weathering conditions of that run.

The first 14 days of the response has been selected as the focus area for the OSM resourcing assessment as it is the period during which resources are likely to be overwhelmed, before additional resources (including appropriately qualified personnel, suitable vessels and additional monitoring equipment) can be scaled in locally and from interstate and international resources. Other factors influencing the selection of the scenario with the highest capability requirements were location of the spill, proximity to receptors, and hydrocarbon properties. The OSM Services Provider Contract includes provision of scale-up resources, which would be considered and mobilised as soon as practicable following the spill.

Consideration of Key Ecological Features, Biologically Important Areas and transient receptors

A number of broadscale ecological features are located within the OSM Planning Area and have been considered in monitoring prioritisation and OSM capability planning for the Petroleum Activity activities. The following Key Ecological Features (KEFs) (and their distances to the Operational Area) are noted in Table 4-14 of the EP:

- Continental Slope Demersal Fish Communities KEF – overlaps Operational Area
- Seringapatam Reef and Commonwealth waters in the Scott Reef Complex KEF – overlaps Operational Area
- Ancient coastline at 125 m depth contour KEF – 74 km south-east of Operational Area

The Continental Slope Demersal Fish Communities KEF and Seringapatam Reef and Commonwealth waters in the Scott Reef Complex KEF overlap the Petroleum Activity Operational Area, so are at a higher risk of contact with hydrocarbons. All KEFs within the OSM Planning Area are described in detail in Section 4.7 and Appendix C of the EP. These KEFs include subsea receptors therefore, OSM planning and resourcing for this activity includes relevant monitoring requirements, such as water quality, sediment quality, benthic habitats and fish for these features.

The OSM Area also overlaps a number of Biologically Important Areas (BIAs) with protected species potentially occurring in the area, as described in Section 4.6 of the EP. A number of the BIAs and protected species are located within the geographical extents of other receptors, such as marine turtles within the Scott Reef Nature Reserve and KEF so these BIAs and protected species would automatically be included in the relevant SMPs for that receptor (refer to Table C - 7). Where BIAs, protected species and KEFs are situated away from the monitoring priorities, they will be captured in the Offshore Environs monitoring unit described in Table C - 7.

Monitoring Units

Using the stochastic modelling results, Woodside has grouped the monitoring priorities for the Petroleum Activity into monitoring 'units' (Table C - 7). These units incorporate all of the possible receptors that may be contacted by the Petroleum Activity scenarios shown in Table 2-1 at a probability ≥10%. Receptors only contacted by entrained hydrocarbons and no other phase of hydrocarbon were not included. These unit groupings are based on consultation with experienced monitoring personnel and planners, who often group these receptors together for time-bound monitoring projects. The grouping of units is based on factors such as access and distance to ports, simultaneous operations (SIMOPS) of multiple vessels and teams working in a close area, travel time between individual locations/receptors and time taken to collect samples for each SMP.

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The monitoring units presented in Table C - 7 also include KEFs, BIAs and transient species. Additional information on the seasonality of the receptors can be found in Appendix B of the OSM-BIP and in Section 4.7 of the EP. Each monitoring unit will require 1–2 teams during the initial response (first 14 days). The number of teams allocated to each unit will depend on the extent of the spill, the outcome of the monitoring prioritisation finalised at the time of the spill (Section 13 of the OSM-BIP), the ALARP assessment, and SIMOPs.

It should be noted that not all monitoring units will be contacted by a single spill and that the list below has been generated from stochastic modelling results.

Table C - 7: Monitoring units for the Petroleum Activity relevant to stochastic modelling results

Receptors within each Unit	Type
Scott Reef	
Scott Reef*	Nature Reserve
Scott Reef North*	Reef, Shoals and Banks
Scott Reef South	Reef, Shoals and Banks
Sandy Islet (emergent feature of Scott Reef South)	Reef, Shoals and Banks
Whale shark (foraging)	BIA
Marine turtle	BIA
Pygmy blue whale (distribution)	BIA
Seabird and shorebirds	BIA
Continental Slope Demersal Fish Communities*	KEF
Ancient Coastline at 125 m depth contour*	KEF
Seringapatam Reef and Commonwealth waters in the Scott Reef Complex*	KEF
Control	
Control sites	All

**Submerged receptor that has no features above the sea surface.*

Stochastic modelling

OSM resourcing requirements were determined using stochastic modelling. Deterministic modelling was not undertaken, as the existing response capability arrangements (refer to Sections 9 and 10 of the OSM-BIP) provide sufficient capacity to meet or exceed the resourcing requirements for all receptors forecast to be contacted by floating, shoreline and/or dissolved hydrocarbons (at ≥10% probability) by stochastic modelling within the initial two weeks of the Petroleum Activity.

The resources required to commence operational and scientific monitoring components during weeks 1–2 are presented in Table C - 8 and Table C - 9 respectively. These are based on the monitoring priorities (Table C - 4 and Table C - 5), the implementation schedule (Table C - 6) and the worst-case stochastic results, and include the resources for monitoring unaffected control sites.

Woodside's OSM capability arrangements are detailed in Sections 9 and 10 of the OSM-BIP. These sections demonstrate that Woodside has established arrangements to mobilise up to 5-6 teams for most OMPs and SMPs in the initial stages of a spill, and provision for scale-up capability, confirming that despite the use of stochastic modelling (which means an overconservative estimate of capability has been used for this activity) the OSM capability requirements for the Petroleum Activity (Table C - 8 and Table C - 9) are satisfied by the existing capability arrangements in the OSM-BIP.

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Table C - 8: Resources required for initially implementing operational monitoring plans for the Petroleum Activity spill scenarios

OMP	Week 1 (total)	Week 2 (total)	Arrangement
OM1: Hydrocarbon characterisation*^	1 team Scott Reef Unit[#] **Total 1 team**	1 team Scott Reef Unit **Total 1 team**	OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers Laboratory arrangements
OM2: Hydrocarbon in water assessment*	Refer to OMP: Hydrocarbon properties and weathering behaviour at sea resourcing* (all sites)		OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers
OM3: Hydrocarbon in sediment assessment*	Refer to OMP: Hydrocarbon properties and weathering behaviour at sea resourcing* (all sites)		OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers
OM5: Rapid marine fauna surveillance	1 team to conduct aerial surveys for Scott Reef Unit (2 observers per aircraft) **Total 1 team** Note: Fauna related SMPs are likely to be initiated simultaneously or following aerial assessment with vessel and ground based fauna surveys carried out as part of the relevant fauna SMP.		OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers Aviation contractors
OM6: Shoreline Clean-up Assessment	Detail on resources required for shoreline clean-up assessment is presented in Section 5.6.1		Australian Marine Oil Spill Centre (AMOSC) Master Services Agreement (MSA) and/or OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers State/Territory Response Teams and AMSA National Response Team
OM7: Air quality modelling (responder health and safety)	1 model	N/A	3rd party modelling provider / Oil Spill Response Organisation
Total number of teams	**2 teams**	**2 teams**	

[#] Specific monitoring units are mentioned for planning and guidance purposes based on a worst-case planning approach. In the event of an actual spill, other locations and/or receptors may be contacted and the ability to access these locations (i.e. with consideration of safety and simultaneous operations (SIMOPS)) would be assessed. This would be identified and managed as part of implementation as per the guidance in Section 13 of the BIP.

** Initial co-mobilisation between OMP: Hydrocarbon properties and weathering behaviour at sea, OMP: Water quality assessment, and OMP: Sediment quality assessment*

^ These resources may not be required if relevant scientific monitoring components' initiation criteria have been triggered.

Table C - 9: Resources required for initially implementing scientific monitoring plans for the Petroleum Activity spill scenarios

SMP	Week 1 (total)	Week 2 (total)	Arrangement
SM1: Water quality impact assessment *^	1 team Scott Reef Unit[#] 1 team control site(s) **Total 2 teams**	1 team Scott Reef Unit 1 team control site(s) **Total 2 teams**	OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers Laboratory arrangement
SM2: Sediment quality impact assessment *	Refer to SMP: Water quality impact assessment* (all sites)		OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers Laboratory arrangement
SM3: Intertidal and coastal habitat assessment	1 team Scott Reef Unit 1 team control site(s) **Total 2 teams**	1 team Scott Reef Unit 1 team control site(s) **Total 2 teams**	OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers Laboratory arrangement
SM4: Seabirds and shorebirds^	1 team to conduct initial aerial surveys for Scott Reef Unit **Total 1 aerial team** 1 team to conduct vessel-based surveys for Scott Reef 1 team control site(s) (surveys would include all fauna [birds, reptiles, cetaceans, dugong and whale shark]) **Total 2 vessel-based teams** 1 team to conduct ground-based surveys for Scott Reef[#] 1 team control site(s) (1 experienced ornithologists per team) **Total 2 ground-based teams**	1 team to conduct initial aerial surveys for Scott Reef Unit **Total 1 aerial team** 1 team to conduct vessel-based surveys for Scott Reef 1 team control site(s) (surveys would include all fauna [birds, reptiles, cetaceans, dugong and whale shark]) **Total 2 vessel-based teams** 1 team to conduct ground-based surveys for Scott Reef[#] 1 team control site(s) (1 experienced ornithologists per team) **Total 2 ground-based teams**	OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers Laboratory arrangement
SM5: Marine mega-fauna assessment – whale shark, dugong and cetaceans^	Aerial surveys refer to SMP: Seabirds and shorebirds Vessel surveys refer to SMP: Seabird and shorebirds	Aerial surveys refer to SMP: Seabirds and shorebirds Vessel surveys refer to SMP: Seabird and shorebirds	OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers Laboratory arrangement
SM5: Marine mega-fauna assessment – reptiles^	Aerial surveys refer to SMP: Seabirds and shorebirds Vessel surveys refer to SMP: Seabird and shorebirds Ground based survey refer to SMP: Seabird and shorebirds (including 1 member experienced with ground turtle surveys)	Aerial surveys refer to SMP: Seabirds and shorebirds Vessel surveys refer to SMP: Seabird and shorebirds Ground based survey refer to SMP: Seabird and shorebirds (including 1 member experienced with ground turtle surveys)	OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers Laboratory arrangement

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SMP	Week 1 (total)	Week 2 (total)	Arrangement
SM6: Benthic habitat assessment	1 team Scott Reef Unit 1 team control site(s) **Total 2 teams**	1 team Scott Reef Unit 1 team control site(s) **Total 2 teams**	OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers Laboratory arrangement
SM7: Marine fish and elasmobranch assemblages assessment	1 team Scott Reef Unit 1 team control site(s) **Total 2 teams**	1 team Scott Reef Unit 1 team control site(s) **Total 2 teams**	OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers Laboratory arrangement
SM8: Fisheries impact assessment	**Total 1 team** to cover all relevant Commonwealth and State fisheries – initial locations determined in consultation with key stakeholders to reflect current fishing zones/effort		OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers Laboratory arrangement
SM9: Heritage features assessment	**1 team**	**1 team**	OSRL OSM Supplementary Service Agreement Woodside Contracted Vessel Providers Laboratory arrangement
SM10: Social impact assessment	**1 team**	**1 team**	OSRL OSM Supplementary Service Agreement
Total number of teams	**16 teams**	**16 teams**	

[#] Specific monitoring units are mentioned for planning and guidance purposes based on a worst case planning approach. In the event of an actual spill, other locations and/or receptors may be contacted and the ability to access these locations (i.e. with consideration of safety and SIMOPS) would be assessed. This would be identified and managed as part of implementation as per the guidance in Section 13 of the BIP.

** Initial co-mobilisation between SMP: Water quality impact assessment and SMP: Sediment quality impact assessment.*

^ Can initially be performed by the same team as the relevant OMP. This SMP may replace the relevant OMP, if the relevant OMP's termination criteria are triggered.

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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
Abrolhos Islands: Pelseart Group
Abrolhos Islands: Wallabi Group
Abrolhos 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

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Enderby Island – Dampier
Rosemary Island – Dampier
Legendre Island – Dampier
Karratha Gas Plant
KGP to Withnell Creek
KGP to Northern Shore
KGP Fire Pond & Estuary
KGP to No Name Creek
Broome
Sahul Shelf Submerged Banks and Shoals
Clerke Reef (Rowley Shoals)
Imperieuse Island (Rowley Shoals)
Mermaid Reef (Rowley Shoals)
Scott Reef
Oiled Wildlife Response
Exmouth
Dampier region
Shark Bay

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