



Woodside
Energy

Stybarrow End State Decommissioning Environment Plan Stybarrow Decommissioning

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Acronym and Glossary

Term	Description
AFMA	Australian Fisheries Management Authority
AHO	Australian Hydrographic Office
AHP	Analytic hierarchy process
AIS	Automatic Identification System
ALARP	As low as reasonably practicable
AMP	Australian Marine Park
AMSA	Australian Maritime Safety Authority
ANZECC	Australian and New Zealand Environment and Conservation Council
API	American Petroleum Institute
APPEA	Australian Petroleum Production and Exploration Association
APU	Australian Production Unit
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
BIA	Biologically Important Area
CCG	Cape Conservation Group
CEO	Chief Executive Officer
CP	Cathodic protection
CRG	Community Reference Group
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DCCEEW	Department of Climate Change, Energy, Environment and Water (formerly Department of Agriculture, Water and the Environment)
DGV	Default Guideline Value
DISER	Department of Industry, Science, Energy and Resources

Term	Description
DoD	Department of Defence
DOIR	WA Department of Industry and Resources
DTM	Disconnectable Turret Mooring
EIA	Environmental impact assessment
EMBA	Environment that may be affected
ENVID	Environmental hazard identification
Environment Regulations	Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023
EP	Environment Plan
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
EPO	Environmental Performance Outcome
EPS	Environmental Performance Standard
ESD	Ecologically Sustainable Development
FPSO	Floating Production, Storage and Offloading
GVI	General visual inspection
HSE	Health, Safety and Environment
HSEC	Health Safety Environment Committee
IMCRA	Integrated Marine and Coastal Regionalisation of Australia
IMO	International Maritime Organization
IT	Information Technology
IUCN	International Union for the Conservation of Nature
KEF	Key Ecological Feature

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Term	Description
MC	Measurement Criteria
MNES	Matters of National Environmental Significance
MPA	Marine Protected Area
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
NOPTA	National Offshore Petroleum Titles Administrator
NWS	North West Shelf

Term	Description
OPGGGS Act	<i>Offshore Petroleum and Greenhouse Gas Storage Act 2006</i>
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic
P&A	Plug and abandonment
PMST	Protected Matters Search Tool
PS	Performance Standard
ROV	Remotely Operated Vehicle
Woodside	Woodside Energy (Australia) Pty Ltd

1 Introduction

1.1 Proposed Activity

Woodside Energy (Australia) Pty Ltd (Woodside) as Titleholder of production licence WA-32-L under the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (the OPGGA Act), proposes to decommission *in situ* selected equipment within the Stybarrow field within WA-32-L. The equipment proposed for decommissioning *in situ* consists of:

- Nine disconnectable turret mooring (DTM) anchors and residual chain.
- Ten suction piles associated with:
 - Nine riser bases
 - One water injection manifold foundation
- One wellhead, Eskdale-1

Decommissioning *in situ* of this equipment will hereafter be referred to as the petroleum activity and forms the scope of this environment plan (EP). A detailed description of the petroleum activity is provided in **Section 3**.

This EP has been prepared as part of the requirements of the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (the Environment Regulations) 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 from planned (routine and non-routine) activities and unplanned events (including emergency situations) of the petroleum activity are identified and described,
- appropriate management controls are implemented to reduce impacts and risks to a level that is 'as low as reasonably practicable' (ALARP) and acceptable, and
- the petroleum activity is performed in a manner consistent with the principles of ecologically sustainable development (as defined in Section 3A of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)).

The EP describes the process used by Woodside to identify and evaluate potential environmental impacts and risks arising from the petroleum activity, and defines the environmental performance outcomes, performance standards and measurement criteria to be applied to manage the impacts and risks to ALARP and acceptable levels. This EP includes an implementation strategy for monitoring, auditing, and managing the petroleum activity to be performed by Woodside and its contractors. The EP documents and considers consultation with relevant authorities, persons, and organisations.

1.3 Scope of this Environment Plan

A detailed description of the petroleum activity is provided in **Section 4**. An assessment of the decommissioning options for the subsea infrastructure proposed to be permanently abandoned *in situ* is presented in **Section 3**. The spatial boundary of the petroleum activity has been described and assessed using the environment that may be affected (EMBA), which is described in **Section 4.5**.

Other activities relevant to the decommissioning of the Stybarrow field are covered in other EPs and include:

- Management and removal of most of the subsea equipment in the Stybarrow field, addressed in Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003)

- Plug and abandonment of shut-in wells in the Stybarrow field, addressed in the Stybarrow Plug and Abandonment EP (BHPB-00SC-N000-0005)

1.4 Woodside/BHP Petroleum Merger

BHP Petroleum (Australia) Pty Ltd (BHP Petroleum) and Woodside announced their intention to merge in 2021, which became effective on 1 June 2022. Prior to the 1 June 2022, BHP Petroleum and Woodside acted as independent companies, thus planning activities for this decommissioning Environment Plan were conducted originally by BHP Petroleum. The merger consisted of a change of control of BHP Petroleum International Pty Ltd (holding comp for BHP global petroleum business) via a share sale to Woodside Petroleum Ltd. All BHP Petroleum entities holding Australian Petroleum titles transferred to Woodside parent company control with this change in ownership.

All BHP Petroleum policies, standards, processes and procedures were included in the merger agreement and remain valid. Harmonisation of processes between BHP Petroleum and Woodside commenced planning upon the completion of the merger and will be conducted in a staged manner. The BHP Petroleum HSE Management system (herein referred to as the Woodside (PetDW) HSE Management System) will continue to be used by 'heritage' BHP operations until potential changes have been assessed. References to BHP, BHP Petroleum and Woodside are used interchangeably throughout this document.

The Titleholder name change from BHP Petroleum (Australia) Pty Ltd to Woodside Energy (Australia) Pty Ltd was made on 11 July 2022.

1.5 Overview of Health, Safety and Environmental Management System

All Woodside-controlled activities associated with the petroleum activity will be conducted in line with:

- Woodside "Our Values" (**Appendix A**)
- Woodside Environment and Biodiversity Policy (**Appendix B**)
- Woodside (PetDW) Management System
- Woodside (PetDW) Health, Safety and Environment (HSE) Standard
- any specific commitments laid out in this EP.

All Woodside sites must maintain up-to-date practices that adhere to the requirements contained in the Woodside (PetDW) HSE Management System and Standard. Activity-specific environmental management measures specific to the Petroleum Activity are implemented through this EP.

1.6 Environment Plan Summary

The requirement in Regulation 35(7) of the Environment Regulations for an EP summary has been met by the material provided in this EP. **Table 1-1** maps the EP summary requirements to the relevant content within this EP.

Table 1-1: EP summary

EP Summary Material Requirement	Relevant Section of the EP
A description of the activity	Section 4
The location of the activity	Section 4.2
A description of the receiving environment	Section 5
Details of the environmental impacts and risks	Section 8
The control measures for the activity	Section 8

EP Summary Material Requirement	Relevant Section of the EP
The arrangements for ongoing monitoring of the titleholder's environmental performance	Section 10
Response arrangements in the oil pollution emergency plan	Not applicable
Consultation already undertaken and plans for ongoing consultation	Section 6
Details of the titleholder's nominated liaison person for the activity	Section 1.8

1.7 Structure of the Environment Plan

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

Table 1-2: EP content requirements from the Environment Regulations and relevant sections of the EP demonstrating the requirements are met.

Criteria for Acceptance	Content Requirements / Relevant Regulations	Elements	Section of the EP
Regulation 34 (a): <i>is appropriate for the nature and scale of the activity</i>	Regulation 21: <i>Environmental Assessment</i> Regulation 22: <i>Implementation strategy for the environment plan</i> Regulation 24: <i>Other information in the environment plan</i>	The principle of 'nature and scale' applies throughout the EP	Section 4 Section 5 Section 6 Section 6.1 Section 8
Regulation 34(b): <i>demonstrates that the environmental impacts and risks of the activity will be reduced to as low as reasonably practicable</i>	Regulation 21(1)–21(7): <i>21(1) Description of the activity</i> <i>21(2)(3) Description of the environment</i> <i>21(4) Requirements</i> <i>21(5)(6) Evaluation of environmental impacts and risks</i> <i>21(7) Environmental performance outcomes and standards</i> Regulation 24(a)–24(b): <i>A statement of the titleholder's corporate environmental policy</i> <i>A report on all consultations between the titleholder and any relevant person</i>	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 4 Section 5 Section 6 Section 6.1 Section 8
Regulation 34(c): <i>demonstrates that the environmental impacts and risks of the activity will be of an acceptable level</i>	Regulation 21(7): <i>Environmental performance outcomes and standards</i>	Environmental Performance Outcomes Environmental Performance Standards Measurement Criteria	Section 8

Criteria for Acceptance	Content Requirements / Relevant Regulations	Elements	Section of the EP
<i>and measurement criteria</i>			
Regulation 34(e): <i>includes an appropriate implementation strategy and monitoring, recording and reporting arrangements</i>	Regulation 22: <i>Implementation strategy for the environment plan</i>	Implementation strategy, including: <ul style="list-style-type: none"> • systems, practices, and procedures, • performance monitoring, • Oil Pollution Emergency Plan (OPEP) and scientific monitoring, and • ongoing consultation 	Section 6.1 Section 10 OPEP not required – no credible hydrocarbon spill scenarios
Regulation 34(f): <i>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</i>	Regulation 21(1)–21(3): 21(1) <i>Description of the activity</i> 21(2) <i>Description of the environment</i> 21(3) <i>Without limiting [Regulation 21(2)(b)], particular relevant values and sensitivities may include any of the following:</i> <i>(a) the world heritage values of a declared World Heritage property within the meaning of the EPBC Act</i> <i>(b) the national heritage values of a National Heritage place within the meaning of that Act</i> <i>(c) the ecological character of a declared Ramsar wetland within the meaning of that Act</i> <i>(d) the presence of a listed threatened species or listed threatened ecological community within the meaning of that Act</i> <i>(e) the presence of a listed migratory species within the meaning of that Act</i> <i>(f) any values and sensitivities that exist in, or in relation to, part or all of:</i> <i>(i) a Commonwealth marine area within the meaning of that Act; or</i> <i>(ii) Commonwealth land within the meaning of that Act.</i>	No activity, or part of the activity, undertaken in part of a declared World Heritage property.	Section 5 Section 8

Criteria for Acceptance	Content Requirements / Relevant Regulations	Elements	Section of the EP
Regulation 34(g): <i>(i) the titleholder has carried out the consultations required by Section 25</i> <i>(ii) the measures (if any) that the titleholder has adopted, or proposes to adopt, because of the consultations are appropriate</i>	Regulation 25: <i>Consultation with relevant authorities, persons and organisations, etc.</i> Regulation 24(b): <i>A report on all consultations between the titleholder and any relevant person</i>	Consultation in preparation of the EP	Section 6
Regulation 34(h): <i>complies with the Act and the regulations</i>	Regulation 23: <i>Details of the Titleholder and liaison person</i> Regulation 24: <i>Details of all reportable incidents in relation to the proposed activity.</i>	All contents of the EP must comply with the <i>Offshore Petroleum and Greenhouse Gas Storage Act 2006</i> and the Environment Regulations	Section 1.8

1.8 Titleholder Details

Woodside Energy (Australia) Pty Ltd is the operator and nominated titleholder of WA-32-L. The non-operating titleholder is:

- Woodside Energy Ltd.

In accordance with Regulation 23(1) of the Environment Regulations, details of the titleholder are provided in **Table 1-3**.

Table 1-3: Titleholder details

Name	Woodside Energy (Australia) Pty Ltd
Business address	11 Mount St, Perth, Western Australia 6000
Telephone number	1800 442 977
Australian Company Number	006 923 879

In accordance with Regulation 23(2) of the Environment Regulations, details of the titleholder's nominated liaison person are provided in **Table 1-4**.

In the event of any change in the titleholder, titleholder parent company, a change in the titleholder's nominated liaison person or a change in the contact details for either the titleholder or the liaison person, Woodside will notify NOPSEMA in writing in accordance with Regulation 23(3) of the Environment Regulations.

Table 1-4: Titleholder's nominated liaison person

Name	Pip Milne
Position	Australian Projects Decommissioning Environment Lead
Business address	11 Mount St, Perth, Western Australia 6000

Telephone number	1800 442 977
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2 Legislative Framework

2.1 International Conventions and Agreements

2.1.1 London Convention and London Protocol

The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972, referred to as the London Convention, is an international agreement to control pollution of the sea by dumping. It was updated by the 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972, referred to as the London Protocol. Australia is a signatory to the London Convention and the London Protocol. The *Environment Protection (Sea Dumping) Act 1981* (**Section 2.2.3**) gives effect to the London convention and London Protocol in Australian offshore waters.

The petroleum activity in this EP includes decommissioning *in situ* of equipment – a wellhead, foundations and anchors buried in the seabed. Decommissioning *in situ* of equipment is consistent with the definition of sea dumping in the London Convention and London Protocol – i.e., the deliberate disposal at sea of man-made structures. The equipment to be decommissioned *in situ* consists primarily of steel. Annex 1 of the London Protocol states that bulky items primarily comprising steel may be dumped at sea where practicable access to other disposal options are not available. Dumping of materials permitted by Annex 1 are subject to a permitting process, which is implemented by the *Environment Protection (Sea Dumping) Act 1981* in Australian offshore waters.

Woodside has identified that the recovery of the equipment to be abandoned *in situ* may feasibly be removed, however removal is not practicable due to:

- the mass and size of the equipment
- the degree to which the equipment is buried in the seabed – the foundations, wellhead and anchors are intended to provide secure attachment points for infrastructure – and the associated disturbance to the seabed to remove the equipment.
- the water depth and remoteness of the equipment location

2.1.2 United Nations Convention on the Law of the Sea

Article 60 of the 1982 United Nations Convention on the Law of the Sea (UNCLOS), to which Australia is a party, states:

“Any installations or structures which are abandoned or disused shall be removed to ensure safety of navigation, taking into account any generally accepted international standards established in this regard by the competent international organization. Such removal shall also have due regard to fishing, the protection of the marine environment and the rights and duties of other States.”

The IMO is regarded as the competent organization to deal with the requirement of Article 60 of the UNCLOS.

Following UNCLOS, the IMO published Resolution A.672(16) Guidelines and Standards for the Removal of Offshore Installations and Structures on the Continental Shelf and in the Exclusive Economic Zone (IMO 1989). This resolution recognises that structures on the continental shelf should be removed, but coastal states (such as Australia) may make decisions to leave structures partially or completely in the sea.

2.2 Commonwealth Legislation

Environmental aspects of petroleum activity in Commonwealth waters are controlled by three main statutes, the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGGS Act), the EPBC Act and the *Sea Dumping Act*. Each of these, as applicable to the petroleum activity, is described in the next sections. There are also applicable Commonwealth and Western Australian legislation, International Agreements and Conventions and other applicable standards, guidelines, and codes that may apply to the petroleum activities. These are listed in **Appendix C** of this EP.

2.2.1 Offshore Petroleum and Greenhouse Gas Storage Act 2006

The OPGGS Act provides the regulatory framework for all offshore exploration and production activities in Commonwealth waters (those areas beyond three nautical miles from the Territorial Sea baseline and in the Commonwealth Petroleum Jurisdiction Boundary). The Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (referred to as the Environment Regulations) have been made under the auspices of the OPGGS Act for the purposes of ensuring “...*any petroleum activity or greenhouse gas activity carried out in an offshore area is:*

- *carried out in a manner consistent with the principles of ecologically sustainable development set out in section 3A of the EPBC Act*
- *carried out in a manner by which the environmental impacts and risks of the activity will be reduced to as low as reasonably practicable.*
- *carried out in a manner by which the environmental impacts and risks of the activity will be of an acceptable level”.*

This EP meets the requirements of the Environment Regulations by providing a plan that:

- is appropriate for the nature and scale of the activity.
- demonstrates the environmental impacts and risks of the activity will be reduced to as low as reasonably practicable.
- demonstrates the environmental impacts and risks of the activity will be of an acceptable level.
- provides for appropriate environmental performance outcomes, environmental performance standards and measurement criteria.
- includes an appropriate implementation strategy and monitoring, recording and reporting arrangements.
- does not involve the activity or part of the activity, other than arrangements for environmental monitoring or for responding to an emergency, being performed in any part of a declared World Heritage property within the meaning of the EPBC Act
- demonstrates that:
 - an appropriate level of consultation, as required by Division 3, has been performed.
 - the measures (if any) adopted, or proposed to adopt, because of consultations are appropriate.
 - complies with the OPGGS Act and the Environment Regulations.

The OPGGS Act and supporting regulations address licensing, health, safety and environmental matters for offshore petroleum and gas exploration and production operations in Commonwealth waters. Obligations in relation to the maintenance and removal of equipment and property brought onto title are provided in OPGGS Act section 572. Section 572 requires the maintenance of property until it is removed, and removal of property when it is no longer used. NOPSEMA may accept alternatives to removal if a titleholder demonstrates that the alternative arrangements have regard to applicable legislation, relevant Australian Government guidelines and policy (NOPSEMA, 2022).

All Stybarrow subsea infrastructure in WA-32-L will be removed before 31 March 2025, in accordance with section 572(3) of the OPGGS Act, unless NOPSEMA accepts and is satisfied that an alternative decommissioning approach delivers equal or better environmental, safety and well integrity outcomes compared to complete removal.

2.2.1.1 General Direction 833

NOPSEMA issued General Direction 833, made under the OPGGS Act, to the titleholders of WA-32-L. The General Direction is available on NOPSEMA’s website at <https://www.nopsema.gov.au/sites/default/files/2021-09/A781218.pdf> and is summarised, along with Woodside’s intentions to address it, in **Table 2-1**.

This EP covers the decommissioning *in situ* of selected equipment within the Stybarrow field within WA-32-L *in situ*. Other Stybarrow EPs include:

- Stybarrow Plug and Abandonment EP (BHP-00SC-N000-0005), accepted by NOPSEMA on 21 December 2023: <https://docs.nopsema.gov.au/A1035280>
- Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003), accepted by NOPSEMA on 8 January 2024: <https://docs.nopsema.gov.au/A1046921>

Table 2-1: General Direction 833

Direction	Woodside's Intentions relating to Direction 833
Direction 1: Plug or close off, to the satisfaction of NOPSEMA, all wells made in the title area by any person engaged or concerned in operations authorised by the title as soon as practicable and no later than 30 September 2024.	The plug and abandonment of wells subject to Direction 1 is the subject of the Stybarrow Plug and Abandonment EP (BHPB-00SC-N000-0005). These activities will be completed before 30 September 2024.
Direction 2: Remove, or cause to be removed, to the satisfaction of NOPSEMA, from the title area all property brought into that area by any person engaged or concerned in the operations authorised by the title as soon as practicable and no later than 31 March 2025.	<p>Most of the equipment in the Stybarrow field will be removed in accordance with the Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003).</p> <p>This EP proposes decommissioning <i>in situ</i> as an alternative to removal for the following equipment:</p> <ul style="list-style-type: none"> • Disconnectable turret mooring (DTM) mooring anchors, which are buried in the seabed. • Suction piles used for the riser base holdback clamps and the water injection manifold. • The Eskdale 1 wellhead <p>Following the completion of the activities in the Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003) and this EP before 31 March 2025, the requirements of Direction 2 will have been met.</p>
Direction 3: Until such time as direction 1 and 2 are complete, maintain all property on the title to NOPSEMA's satisfaction, to ensure removal of the property is not precluded.	Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003) addresses Direction 3.
Direction 4: Provide, to the satisfaction of NOPSEMA, for the conservation and protection of the natural resources in the title area within 12 months after property referred to in direction 2 is removed.	Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003) addresses Direction 4.
Direction 5: Make good, to the satisfaction of NOPSEMA, any damage to the seabed or subsoil in the title area caused by any person engaged or concerned in the operations authorised by the title within 12 months after the property referred to in direction 2 is removed.	Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003) addresses Direction 5.

Direction	Woodside's Intentions relating to Direction 833
Direction 6: <ul style="list-style-type: none"> • Submit to NOPSEMA on an annual basis, until all directions have been met, a progress report detailing planning towards and process with undertaking the actions required by directions 1, 2, 3, 4 and 5. • The report submitted under Direction 6(a) must be to the satisfaction of NOPSEMA and submitted to NOPSEMA no later than 31 December each year. • Publish the report on the registered titleholders' website within 14 days of obtaining NOPSEMA satisfaction under Direction 6(b). 	Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003) addresses Direction 6.

2.2.1.2 Section 572 Maintenance and Removal of Property Policy

NOPSEMA's *Section 572 Maintenance and Removal of Property (2020)* policy required titleholders to maintain their property and remove it from a title area when it is no longer in use. The policy permits titleholders to propose deviations to removal. NOPSEMA will apply the following principles when considering EPs proposing alternatives to removal (2020):

- An EP must meet the criteria for acceptance under the Environment regulations.
- An EP must demonstrate that a deviation delivers equal or better environmental outcomes compared to complete property removal.
- Property must be maintained so that it can be removed while planning for any deviations takes place.
- Planning towards the proposed end-state for property above the seabed must be supported by information appropriate for the current state of the activity and include justified timeframes.
- While approval for deviations is being pursued and the necessary planning progressed, titleholder submissions must recognise that unless deviations are approved at that point in time, complete property removal is the requirement.

This EP proposes decommissioning *in situ* of a historical wellhead, the DTM anchors and suction piles described in **Section 4** as an alternative to removal. The environmental outcomes of this alternative compared to removal are described in **Section 3**.

2.2.1.3 Section 270 NOPSEMA Advice - Consent to Surrender Title Policy

NOPSEMA's *Section 270 NOPSEMA Advice - Consent to Surrender Title (2022)* policy outlines the advice that the Joint Authority may seek from NOPSEMA when considering applications to surrender petroleum titles. The criteria in Section 270 of the OPGGS Act upon which NOPSEMA will base their advice includes whether:

- The registered holder of the permit, lease or licence has complied with the provisions contained in Chapter 6 of the OPGGS Act and in the regulations made under the OPGGS Act
- The registered holder of the permit, lease or licence has, to the satisfaction of NOPSEMA, removed or caused to be removed from the surrender area all property brought into the surrender area by any person engaged or concerned in the operations authorised by the permit, lease or licence; or made arrangements that are satisfactory to NOPSEMA in relation to that property.
- The registered holder of the permit, lease or licence has, to the satisfaction of NOPSEMA, plugged or closed off all wells made in the surrender area by any person engaged or concerned in the operations authorised by the permit, lease or licence.
- The registered holder of the permit, lease of licence has provided, to the satisfaction of NOPSEMA, for the conservation and protection of the natural resources in the surrender area.

- The registered holder of the permit, lease or licence has, to the satisfaction of NOPSEMA, made good any damage to the seabed or subsoil in the surrender area caused by any person engaged or concerned in the operations authorised by the permit, lease or licence.

Woodside intends to apply to surrender the WA-32-L title following acceptance of this EP, and completion of activities covered under, the Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003) and the Stybarrow Plug and Abandonment EP (BHPB-00SC-N000-0005). Woodside will implement a decommissioning environmental survey program at the conclusion of all equipment removal activities. The results of this program will be used to assess whether the requirements of Section 270(3)(e) and Section 270(3)(f) have been met. The decommissioning environmental survey program is described further in the accepted Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003; <https://docs.nopsema.gov.au/A1046921>).

2.2.2 Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act aims to protect and manage nationally and internationally important flora, fauna, ecological communities, and heritage places in Australia. These are defined in the Act as Matters of National Environmental Significance (MNES). NOPSEMA, through the Streamlining Offshore Petroleum Environmental Approvals Program, implements these requirements with respect to offshore petroleum activity in Commonwealth waters. The Streamlining Offshore Petroleum Environmental Approvals Program is applicable to all offshore petroleum activity authorised by the OPGGS Act and requires the petroleum activity to be conducted in accordance with an accepted EP, consistent with the principles of ecologically sustainable development (ESD). The definition of 'environment' in the Streamlining Offshore Petroleum Environmental Approvals Program is consistent with that used in the EPBC Act and encompass all matters protected under Part 3 of the EPBC Act.

The development of the Stybarrow field was referred for assessment as an action under the EPBC Act (Referral Number 2004/1469) and assessment was subsequently set at the level of an Environmental Impact Statement (EIS). The action was approved by the Minister for the Environment following assessment of the EIS, with several conditions set for the action, which were consolidated in 2015. The consolidated conditions are provided in **Appendix C**, with conditions that apply to the petroleum activity described in this EP summarised in **Table 2-2**.

Table 2-2: EPBC 2004/1469 conditions relevant to the petroleum activity considered in this EP.

EPBC 2004/1469 Condition	Relevance to Petroleum Activities described in this EP
<p>3) The person taking the action must submit a decommissioning plan for approval by the Minister that considers the removal of all structures and components above the sea floor, including floating production, storage and offtake vessels, subsea wells, flowlines, and any other associated infrastructure.</p> <p>Decommissioning may not commence until the plan is approved. The approved plan must be implemented.</p>	<p>The decommissioning plan required by EPBC 2004/1469 is met by:</p> <ul style="list-style-type: none"> ▪ Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-003) ▪ Stybarrow Well Plug and Abandonment EP (BHPB-00SC-N000-0005) ▪ Stybarrow End State Decommissioning EP (BHPB-00SC-N000-0007) (this plan) <p>In combination, these plans consider the maintenance and removal of all property. Woodside is seeking a deviation from the requirement to remove some equipment buried in the seabed in accordance with the Guideline: Offshore Petroleum Decommissioning (Department of Industry, Science, Energy and Resources, 2022) and Section 572 Maintenance and Removal of Property (NOPSEMA, 2022b) policy. The Stybarrow End State Decommissioning EP (BHPB-00SC-N000-0007) is the permissioning document for the deviation.</p>

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 activity in Commonwealth waters, the above is implemented by NOPSEMA. Commitments relating to listed threatened species and ecological communities under the Act are included in the Program Report (Government of Australia, 2014):

- NOPSEMA will not accept an Environment Plan that proposes activities which will result in unacceptable impacts to a listed threatened species or ecological community.
- NOPSEMA will not accept an Environment Plan 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 relating to a threatened species or ecological community before accepting an Environment Plan.

Recovery and management plans relevant to this EP are outlined in **Section 8.3**.

2.2.3 Environment Protection (Sea Dumping) Act 1981

The *Environment Protection (Sea Dumping) Act 1981* (Sea Dumping Act) gives effect to Australia’s obligations under the London Convention and the London Protocol. The *Sea Dumping Act* aims to protect and preserve the marine environment from all sources of marine pollution, and to prevent, reduce and eliminate pollution by controlling the dumping of wastes and other materials at sea. The *Sea Dumping Act* regulates the dumping at sea of controlled material (including certain wastes and other matter), the incineration at sea of controlled material, loading for the purpose of dumping or incineration, export for the purpose of dumping or incineration, and the placement of artificial reefs. Permits are required to authorise sea dumping activities.

The *Sea Dumping Act* and associated sea dumping permits are administered by the Department of Climate Change, Energy, the Environment and Water (DCCEEW) (formerly the Department of Agriculture, Water and Environment (DAWE)). The decommissioning *in situ* of the equipment within the scope of this EP will require sea dumping permits. This has been confirmed with DCCEEW, as outlined in the summary of consultations in **Appendix F**. Woodside will submit an application for a sea dumping permit to DCCEEW and progress the application process as required.

2.3 Environmental Guidelines, Standards and Codes of Practice

Several guidelines, standards and codes of practice are relevant to environmental management of the petroleum activity. These are listed in **Appendix C**.

3 Decommissioning Options Assessment

3.1 Regulatory Context

Article 60 of the 1982 United Nations Convention on the Law of the Sea (UNCLOS), to which Australia is a party, states:

“Any installations or structures which are abandoned or disused shall be removed to ensure safety of navigation, taking into account any generally accepted international standards established in this regard by the competent international organization. Such removal shall also have due regard to fishing, the protection of the marine environment and the rights and duties of other States.”

Australia is a member state of the International Maritime Organization (IMO), a body created by agreement of member states of the United Nations. The IMO is regarded as the competent organization to deal with the requirement of Article 60 of the UNCLOS. Following UNCLOS, the IMO published *Resolution A.672(16) Guidelines and Standards for the Removal of Offshore Installations and Structures on the Continental Shelf and in the Exclusive Economic Zone* (IMO, 1989). This resolution recognises that structures on the continental shelf should be removed, but coastal states (such as Australia) may make decisions to leave structures partially or completely in the sea.

Direction 2 in General Direction 833 states that the titleholder remove, or cause to be removed, all property brought into WA-32-L by the titleholder to the satisfaction of NOPSEMA. Hence, the removal option is referred to as the base case for decommissioning in the decommissioning options assessment. This aligns with *Guideline: Offshore Petroleum Decommissioning* (Department of Industry, Science, Energy and Resources, 2022), which states removal being the base case for decommissioning.

Section 572 of the OPGGS Act states that *“a titleholder must remove from the title area all structures that are, and all equipment and other property that is, neither used nor to be used in connection with the operations in which the titleholder is or will be engaged and that are authorised by the permit, lease, licence or authority.”*, which is consistent with the requirement of Article 60 of UNCLOS. Under section 572(7) OPGGS Act property removal requirements are subject to any other provision of the OPGGS Act, the regulations, directions given by NOPSEMA or the responsible Commonwealth Minister, and any other law. Under section 270(3) OPGGS Act, all property brought into the surrender area must be removed to the satisfaction of NOPSEMA, or arrangements that are satisfactory to NOPSEMA must be made relating to the property before title surrender. The *Guideline: Offshore Petroleum Decommissioning* (Department of Industry, Science, Energy and Resources, 2022) and *Section 572 Maintenance and Removal of Property* (NOPSEMA, 2022) state that alternative decommissioning approach may be considered if the environmental outcomes are equal or better than complete removal, and that the alternative approach complies with all other requirements.

The *Section 572 Maintenance and Removal of Property* (NOPSEMA, 2022) policy states that any EP proposing an alternative to removal must include:

- a feasibility assessment of all decommissioning options that could reasonably be undertaken and are likely to be successful.
- an evaluation of all environmental impacts and risks of all feasible options. The evaluation should:
 - be appropriate to the nature and scale of the activity.
 - demonstrate compliance with relevant domestic legislation and international guidelines and standards (for example, those provided by the IMO Resolution A.672(16))
 - consider information received during early consultation.
 - demonstrate that the alternative arrangements, and any subsequent benefits, will be consistent with the principles of ESD.

- consider control measures necessary to manage the impacts and risks.
- consider environmental impacts and risks within Australia’s environment including, where relevant, indirect consequences that may arise from the activity of removing property etc. from a title area.
- a description of monitoring or survey activities proposed to be conducted to confirm decommissioning outcomes have been met, and that control measures have been implemented effectively.
- a description of the arrangements for long term management of property etc. which is not removed, including any ongoing monitoring.

3.2 Decommissioning Options Assessment

Woodside has removed, or will remove, most of the equipment in the Stybarrow Field, as detailed in the Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003) and Stybarrow Plug and Abandonment EP BHPB-00SC-N000-0005). The decommissioning of the following equipment is not covered by these EPs, and Woodside are proposing the following equipment groups as candidates for decommissioning *in situ*:

- Nine DTM anchors and residual chain following removal of the chain as close as practicable to the anchor (cut at the mudline).
- Ten suction piles associated with:
 - nine risers hold back bases.
 - one water injection manifold foundation.
- One exploration wellhead, Eskdale-1, (previous mechanical cutting attempts to remove the wellhead were unsuccessful).

The implementation of these options assumes controls are adopted to manage environmental impacts and risks that are consistent with industry good practice.

Each of the feasible decommissioning options for the candidate equipment groups has a range of different environmental, safety, technical, cost, and socio-economic outcomes. In alignment with the *Guideline: Offshore Petroleum Decommissioning* (Department of Industry, Science, Energy and Resources, 2022) Woodside has demonstrated in this EP that alternatives to removal result in equal or better environmental outcomes than removal, for the specific infrastructure listed. Woodside did this by undertaking a decommissioning options evaluation, which is summarised in this section. An evaluation was developed for each decommissioning option to determine the impacts of each on environmental values and sensitivities relative to removal.

The decommissioning options evaluation did not explicitly consider risks (i.e., impacts that may occur due to accidents or emergencies) to environmental values and sensitivities. The risk profile of each of the feasible full and partial removal decommissioning options is broadly similar, with risks generally arising from vessel-based activities (e.g., introductions of invasive marine species and hydrocarbon spills). Woodside has a proven ability to prevent vessel-based risks becoming realised, and hence the environmental risk profiles of the feasible full and partial removal options were not considered to differentiate the feasible decommissioning options. Only environmental impacts were considered when comparing the feasible decommissioning options to the removal option. This approach demonstrates the relative environmental outcomes compared to removal base case.

3.2.1 Decommissioning Options Assessment Methodology

The process used to evaluate the decommissioning options for the candidate equipment groups comprised three steps:

1. Identify feasible decommissioning options.
2. Define environmental criteria and ratings details used to assess the feasible decommissioning options.
3. Assess the feasible decommissioning options using the environmental criteria relative to the ‘removal’ decommissioning requirement under section 573(3) of the OPGGS Act and General Direction 833.

'Removal' in accordance with General Direction 833 is referred to as the base case within this EP. The assessment includes consideration of the principles of ESD.

4. Evaluation options based on compliance alongside relevant legislation and guidelines associated with decommissioning.

The method used to compare the feasible decommissioning options for the candidate equipment groups aligns with Method A – narrative / Red-Amber-Green described in the *Guidelines for Comparative Assessment in Decommissioning Programs* (Oil and Gas UK, 2015).

3.2.1.1 Decommissioning Options

Woodside identified the feasible decommissioning options for the candidate equipment groups. Feasible decommissioning options for each of the candidate equipment groups was broadly categorised as:

- **removal** of the equipment, with no part of the equipment left on or in the seabed.
- **partial removal** of the equipment, with part of the equipment removed and part decommissioned *in situ*.
- **decommissioning *in situ***, with all the equipment left on the seabed in its current state.
- **additional structures** to augment the hard substrate provided by the equipment decommissioned *in situ* (i.e., creating an artificial reef around the equipment).

These options were identified by Woodside through:

- a review of relevant legislation and guidelines, particularly *Section 572 Maintenance and Removal of Property* (NOPSEMA, 2022b) policy, which advises titleholders proposing alternatives to removal to:
 - evaluate the feasibility of all decommissioning options, including partial and complete removal of property.
 - evaluate the environmental impacts and risks of all feasible decommissioning options, including complete removal.
 - demonstrate that the alternative decommissioning approach meets all applicable requirements under the OPGGS Act and regulations, other legislative requirement, and relevant international obligations.
- a review of offshore decommissioning activities globally
- feedback received during stakeholder engagement and a stakeholder workshop.
- preliminary engineering consideration of the methods by which an alternative may be implemented.
- preliminary assessment of the acceptability of the decommissioning options.

3.2.1.2 Technical Feasibility of Decommissioning Options

The technical feasibility of these options is described in **Sections 3.2.2, 3.2.3 and 3.2.4**. These descriptions are based on a “concept select” engineering basis. The execution of the feasible decommissioning options would require more detailed engineering analysis and refinement.

Decommissioning options that had unacceptable impacts and risks to the environment, or could be substituted with less hazardous alternatives, were not considered. This ensures that the decommissioning options environmental impact assessments were not unduly biased against the options. The methods presented for each equipment group are reasonable and consistent with contemporary offshore engineering practices.

3.2.1.3 Decommissioning Options Assessment

An evaluation of the feasible decommissioning options was undertaken by Woodside. The evaluation considered available information, such as engineering studies, environmental conditions in the Stybarrow field and stakeholder consultation outcomes.

The removal of equipment is the decommissioning option to which the other feasible options were compared. Accordingly, removal of equipment was scored as being neutral (as per the definitions in **Table 3-2**). Each of the feasible decommissioning options were assessed relative to the removal option.

Each of the feasible decommissioning options was assessed to determine if it was consistent with the principles of ESD defined in Section 3A of the EPBC Act. These principles of ESD are:

- Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.
- If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.
- The principle of inter-generational equity – that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.
- The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making.
- Improved valuation, pricing and incentive mechanisms should be promoted.

3.2.1.4 Assessment Criteria and Ratings Details

The criteria and sub-criteria used for the decommissioning options assessment are detailed in **Table 3-1** and the ratings are described in **Table 3-2**. These criteria, sub-criteria and ratings were used in the decommissioning options assessments for DTM anchors and residual chains, suction piles and Eskdale-1 wellhead. Each sub-criteria were used to rate the decommissioning options both during and post the removal campaign.

Table 3-1: Decommissioning options assessment criteria and sub-criteria

Criteria	Sub-criteria	Description
Environment	Benthic habitats	Benthic habitats are the environment within which organisms associated with the seabed live. Benthic habitats include the interactions between the physical and biological environment. The benthic habitats that may credibly be impacted by the feasible decommissioning options are described in Section 5.3.2 .
	Fauna	Fauna are animals, hence the term encompasses a diversity of organisms, such as vertebrates (e.g., cetaceans, birds and fishes), sponges, cnidarians (e.g., corals), molluscs etc. Fauna groups have a range of life histories and use the environment in different ways. Life history phases and habitat preferences may be common across different fauna groups (e.g., pelagic larval stages and common in many fauna, sessile filter feeding is common to some cnidarians, molluscs and polychaete species). The fauna that may credibly be impacted by the feasible decommissioning options are described in Sections 5.3.2 and 5.5 .
	GHG emissions (excluding materials management)	Greenhouse gas emissions (e.g., CO ₂ , CH ₄ etc.), excluding emissions associated with handling of materials recovered by removal of the candidate equipment groups (which are considered in the waste management sub-criterion).
	Sediment quality	The quality of the sediment, including physical (e.g., grain size) and chemical (e.g., concentrations of potential toxicants) characteristics. Natural conditions are considered desirable.

Criteria	Sub-criteria	Description
	Water quality	The quality of the water, including physical (e.g., turbidity) and chemical (e.g., concentrations of potential toxicants) characteristics. Natural conditions are considered desirable.
	Waste management	Management of the equipment, includes consideration of the materials hierarchy (in order of preference): <ul style="list-style-type: none"> • reuse & repurpose. • recycle • waste to energy • disposal via landfill • entombment
Social	Other users	Other uses of the sea, such as commercial shipping, commercial fishing, and energy producers. There is very little activity by other users of the sea in the vicinity of the candidate equipment groups.

Table 3-2: Feasible decommissioning options rating definitions

Criteria	Sub-criteria	Scores		
		More Preferred	Neutral ¹	Less Preferred
Environment	Benthic habitat	Materially better outcomes for benthic habitat – increased physical and biological resources available to support survival of species.	Benthic habitat outcomes are the same as the removal base case.	Materially worse outcomes for benthic habitat – reduced physical and biological resources available to support survival of species.
	Fauna	Materially better outcomes for fauna – increased species diversity or species richness than the removal base case.	Fauna outcomes are the same as the removal base case.	Materially worse outcomes for fauna – reduced species diversity or species richness than the removal base case.
	GHG emissions (excluding materials management)	Materially less GHG emissions than the removal base case.	GHG emissions outcomes are the same as the removal base case.	Materially greater GHG emissions than the removal base case.
	Sediment quality	Materially better outcomes for sediment quality – lower modification of physical and chemical characteristics of sediments than the removal base case.	Sediment quality outcomes are the same as the removal base case.	Materially worse outcomes for sediment quality – greater modification of physical and chemical characteristics of sediments than the removal base case.

¹ For this decommissioning options assessment, full removal of infrastructure is considered base case as defined in Section 3.2.1 and therefore scored as neutral. The environmental impacts associated with alternative feasible decommissioning options have been assessed against this base case 'neutral' score for full removal.

Criteria	Sub-criteria	Scores		
		More Preferred	Neutral ¹	Less Preferred
	Water quality	Materially better outcomes for water quality – lower modification of physical and chemical characteristics of water than the removal base case.	Water quality outcomes are the same as the removal base case.	Materially worse outcomes for water quality – greater modification of physical and chemical characteristics of water than the removal base case.
	Materials management	Materially better outcomes for materials management – materials management higher in the materials hierarchy than the removal base case.	Materials management outcomes are the same as the removal base case.	Materially worse outcomes for materials management – materials management lower in the materials hierarchy than the removal base case.
Social	Other users	Materially better outcomes for other users of the sea – less disruption of other users than the removal base case.	Outcomes for other users of the sea are the same as the removal base case.	Materially worse outcomes for other users of the sea – greater disruption of other users than the removal base case.

3.2.2 DTM Anchors and Residual Chain

A description of the DTM anchors and residual chains is provided in **Section 4.8.1**. For the decommissioning options assessment, the anchors are assumed to be buried with the chains removed as close as practicable to the anchors (cut at or below the mudline). This assumption aligns with the proposed condition of the DTM anchors and chains at the time of decommissioning. The most recent ROV survey conducted in July 2023 confirmed this status, all nine DTM anchors were found to be buried (see **Table 4-5**). Based on this ROV survey, the buried residual chain to remain *in situ* is expected to be < 10 m in length for each of the nine DTM anchors. This is the intended state of the anchors at the conclusion of the equipment removal activities described in the Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003).

3.2.2.1 Feasible Decommissioning Options

The feasible decommissioning options for the DTM anchors and residual chain are summarised in **Table 3-3**. Decommissioning *in situ* is the only feasible alternative to removal.

Table 3-3: Summary descriptions of the feasible decommissioning options identified for the DTM anchors.

Decommissioning Option	Description and Feasibility
Removal	Feasible
	The purpose of the anchors and chains is to securely hold the DTM buoy in place, which depends on their ability to remain securely buried within the seabed. The removal option for the DTM anchors and residual chain consists

Decommissioning Option	Description and Feasibility
	<p>of removing each of the nine anchors by pulling them from the seabed in the opposite direction to which they were installed.</p> <p>This methodology involves:</p> <ul style="list-style-type: none"> • securing a line to the anchor leg using an ROV • pulling the line in the opposite direction to which the anchor was installed until the anchor is dislodged from the seabed. • recovering the anchor from the seabed for onshore disposal • making good the disturbance to the seabed from removal of the anchor.
Partial removal	<p>Not feasible</p> <p>The anchors and residual chains are not amenable to being sectioned as the anchors and associated chain are deeply buried in the seabed. Excavation to remove the residual chains from the anchors would be similar to that required for removal, hence removal would be implemented rather than partial removal.</p>
Decommissioning <i>in situ</i>	<p>Feasible</p> <p>The decommissioning <i>in situ</i> option will leave the DTM anchors and residual chains as they are in the seabed at the conclusion of the equipment removal campaign described in the Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003), with the chains cut as close as practicable to the anchor. No further monitoring or interventions would be undertaken.</p> <p>No vessel activities will be required as part of the decommissioning <i>in situ</i> option for the DTM anchors and residual chains.</p>
Additional structures	<p>Not feasible</p> <p>Augmentation relies on substantial hard substrate being provided by the existing equipment. The DTM anchors and residual chains are buried in the seabed with no available hard substrate to augment. Augmentation typically benefits other users (e.g., commercial and recreational fishers), which would have difficulty accessing the augmentation structures due to the offshore location and water depth.</p>

3.2.2.2 Decommissioning Options Assessment

A summary of the decommissioning options assessment for the DTM anchors and residual chains is provided in **Table 3-4**. The assessment is provided in full in **Table 3-5**. The assessment indicates that decommissioning *in situ* results in equal or better environmental outcome than removal of the DTM anchors and residual chains. It is therefore proposed that the DTM anchors and residual chains are decommissioned *in situ*.

The feasible decommissioning options have been demonstrated to align with the principles of ESD as summarised in **Table 3-6**. **Table 3-7** provides an assessment of the decommissioning options against identified relevant legislation and guidelines.

Table 3-4: Summary of evaluation of decommissioning alternatives for the DTM anchors and residual chain

Criteria	Sub-criteria	Removal		Decommissioning <i>In Situ</i>	
		Short-term	Long-term	Short-term	Long-term
Environment	Benthic Habitats	Neutral	Neutral	More Preferred	Neutral
	Fauna	Neutral	Neutral	More Preferred	Neutral
	GHG Emissions (excluding waste management)	Neutral	Neutral	More Preferred	Neutral
	Materials Management	Neutral	Neutral	Less Preferred	Less Preferred
	Sediment Quality	Neutral	Neutral	Neutral	Less Preferred
	Water Quality	Neutral	Neutral	More Preferred	Neutral
Social	Other Users	Neutral	Neutral	More Preferred	Neutral

Table 3-5: Evaluation of decommissioning alternatives for the DTM anchors and residual chain

Criteria	Sub-criteria	Short- and Long-term Considerations	Base Case Justification	Base Case Score	Decommissioning <i>In Situ</i> Justification	Decommissioning <i>In Situ</i> Score
Environment	Benthic Habitats	Short-term	<p>Removal of the DTM anchors and residual chain will result in localised disturbance of the benthic habitats above and around the anchors. These habitats are comprised of unconsolidated silty sediments characterised by infauna and sparse epifauna (Section 5.3.2). This habitat is very widely represented in the region and does not hold significant conservation value.</p> <p>Disturbance to the seabed from dredging and water jetting sediment away from the drag anchors and chains would be executed in such a way as to limit seabed disturbance to that required to uncover and dislodge each anchor.</p> <p>If dredging is required to create a removal path, relocation of ~115 m² per anchor is anticipated. This is expected to result in a minor, short-term effect to soft sediment benthic habitats.</p> <p>Removal is the base case; hence it is neither preferred nor not preferred.</p>	Neutral	<p>No activities would be required and therefore no disturbance to benthic habitats. Existing habitat retained.</p> <p>The preservation of benthic habitat results in this decommissioning option being preferred relative to removal.</p>	More Preferred
		Long-term	<p>Benthic habitats will recover over time following removal of the DTM anchors and residual chains, which will be consistent with the natural state prior to the Stybarrow development and the surrounding benthic habitat.</p> <p>Removal eliminates the release of degradation products.</p> <p>Removal is the base case; hence it is neither preferred nor not preferred.</p>	Neutral	<p>The decommissioning <i>in situ</i> alternative will preserve the benthic habitats and associated species above and around the DTM anchors and residual chains. These unconsolidated sediment habitats and associated biota are widely represented in the region.</p> <p>Rust from corrosion of steel will be deposited in the sediments immediately around the anchors which are buried. This will occur over a prolonged period of time (hundreds to thousands of years) due to the low levels of oxygen in sediments and the protective effect of layers of corrosion. The steel used in the DTM anchors is carbon steel, with relatively low quantities of alloying materials (refer to sediment quality criterion for a consideration of sediment contamination). Most of the degradation products will be buried and not readily available to biota.</p> <p>Peyghan <i>et al.</i> (2023) observed a trend for increased infauna abundance around steel shipwrecks. However, these infauna observations were associated with wrecks that protruded from the sediment, and hence were potentially modifying sediment grain size characteristics through the effects on hydrodynamics. Grain size influences infauna community structure, so the changes in infauna community may be the result of changes in hydrodynamics and consequent changes to sediment characteristics rather than degradation. Given the anchors are completely buried, modification of sediment grain size characteristics is unlikely to occur. As such, the anchors are unlikely to materially modify the physical characteristics of the unconsolidated sediment habitat surrounding the anchors.</p>	Neutral
	Fauna	Short-term	<p>The removal base case will entirely remove the DTM anchors and residual chains. The DTM anchors and residual chains are buried. Hence, there are no sessile benthic fauna associated directly with the anchors.</p> <p>The infauna with sparse epifauna (described in Section 5.3.2) associated with the unconsolidated sediment habitat above the anchors will be lost during removal activities. Mobile fauna that can move away from the disturbance (e.g., fishes) will be displaced rather than lost. The fauna impacted are widely represented in the region and not of significant conservation value.</p>	Neutral	<p>As there would be no activities required, this removes potential impacts to marine fauna during decommissioning activities. Hence this option is preferred compared to removal.</p>	More Preferred

Criteria	Sub-criteria	Short- and Long-term Considerations	Base Case Justification	Base Case Score	Decommissioning <i>In Situ</i> Justification	Decommissioning <i>In Situ</i> Score
			<p>Vessel and helicopters will generate noise in the air and underwater during decommissioning activities. The main source of noise would be from a DP vessel relating to use of DP thrusters. Listed threatened and migratory species that could be potentially impacts by noise and vibration may be present within the water column above the DTM anchors and residual chains, primarily cetaceans, sharks and turtles. The DTM anchors and residual chains are located in a pygmy blue whale migration biologically important area (BIA) and wedge-tailed shearwater breeding BIA.</p> <p>Given the noise levels associated with routine operations of the vessel, the potential impacts on marine fauna are unlikely to cause hearing impairment in marine mammals, reptiles or fishes, such as permanent and temporary threshold shifts (Popper et al., 2014; Southall et al., 2021, 2019). However, there is the potential for behavioural disturbance and masking to occur. Behavioural impacts will depend on the audible frequency range of each potential receptor in relation to the frequency of the noise, as well as the intensity of the noise. Removal of the anchors would be completed in 1-2 days, so behavioural impacts would be restricted to during this time. It is considered noise generated by the vessel and helicopter activities may result in minor, localised, temporary impacts to marine fauna.</p>			
		Long-term	<p>Fauna are expected to recover following removal through natural recruitment and movement of animals. Hence, the impacts to fauna from removal would only affect a relatively small portion of the community and ecosystem services would not be affected.</p>	Neutral	<p>The DTM anchors and residual chain will degrade over time. Given the equipment is made from steel and buried, impacts of degradation on fauna will be negligible. Iron and carbon, which are typically 97% of carbon steel by mass pose little risk to the environment. Iron (II) and (III) oxides (i.e., rust) are listed by the OSPAR Commission as posing little or no risk to the environment (PLONOR) and an extensive review by Johnson et al. (2007) found no evidence of toxic effects of iron in marine sediments. Alloying metals may be present in low percentages which may include toxicants identified by the <i>Australian and New Zealand Guidelines for Fresh and Marine Water Quality</i> (Commonwealth of Australia and New Zealand Government, 2018).</p> <p>The degradation products from the DTM anchors and residual chains will be buried and will not interact with mobile fauna, Infauna have the greatest likelihood of interacting with degradation products given they are associated with sediments. Most infauna are restricted to the upper 30 cm of sediment (Kristensen et al., 2012). As a result, they will not credibly interact with degradation products from the DTM anchors and residual chains which are buried deeper than this. Hence this alternative is neutral compared to removal. Given the gradual degradation process over a long duration, impacts to benthic infauna are expected to be negligible.</p> <p>Refer to Sections 8.1, 8.2 and 8.3 for more information on the impacts of decommissioning <i>in situ</i> of the DTM anchors and residual chains on fauna.</p>	Neutral
	GHG Emissions (excluding waste management)	Short-term	<p>The removal base case would be implemented as part of an equipment removal campaign, with GHG emissions limited to the additional sea time required to complete the removal activities. Atmospheric emissions from vessels undertaking the removal base case will result in a localised decrease in air quality due to exhaust emissions from internal combustion engines.</p>	Neutral	<p>The decommissioning <i>in situ</i> alternative does not generate GHG or atmospheric emissions during the removal campaign. Hence this alternative is preferred compared to removal.</p>	More Preferred

Criteria	Sub-criteria	Short- and Long-term Considerations	Base Case Justification	Base Case Score	Decommissioning <i>In Situ</i> Justification	Decommissioning <i>In Situ</i> Score
			Fuel combustion onboard vessels will generate carbon dioxide emissions, which is a GHG. Removal is the base case; hence it is neither preferred nor not preferred.			
		Long-term	No GHG emissions (excluding materials management) following removal of the equipment. Removal is the base case; hence it is neither preferred nor not preferred.	Neutral	The decommissioning <i>in situ</i> alternative does not generate or offset GHG or atmospheric emissions following the removal campaign. Hence this alternative is neutral compared to the removal base case.	Neutral
	Materials Management	Short-term	The removal option provides the opportunity to re-use, repurpose or recycle the DTM anchors and residual chains. These all sit above disposal in the waste management hierarchy. Removal is the base case; hence it is scored neutral.	Neutral	There is no opportunity to reuse, repurpose or recycle the DTM anchors and residual chains when implementing the decommissioning <i>in situ</i> option. The alternative scores lower in the waste management hierarchy than removal, hence it is less preferred.	Less Preferred
		Long-term	The removal base case provides the opportunity to re-use, repurpose or recycle the DTM anchors and residual chains. These all sit above disposal in the waste management hierarchy. Removal is the base case; hence it is scored neutral.	Neutral	There is no opportunity to reuse, repurpose or recycle the DTM anchors and residual chains. The alternative scores lower in the waste management hierarchy than removal, hence it is less preferred.	Less Preferred
	Sediment Quality	Short-term	Sediment relocation would be required to remove the anchors from the seabed. This may result in localised modification of particle size distribution but is of negligible environmental consequence. Contaminant levels around the DTM anchors and residual chains are consistent with reference sites several kilometres from the Stybarrow equipment, hence sediment resuspension will not remobilise contaminants. Removal is the base case; hence it is scored neutral.	Neutral	No impacts to sediment quality in the short-term.	Neutral
		Long-term	As there would be no infrastructure remaining <i>in situ</i> , this eliminates potential impacts in the long term. Removal is the base case; hence it is scored neutral.	Neutral	The degradation of the DTM anchors and residual chains will impact sediment quality. The steel used in the DTM anchors and chains is carbon steel (typically 97% carbon and iron by mass), with relatively low quantities of alloying materials and pose little or no risk to the environment. Iron (II) and (III) oxides (i.e., rust) are listed by the OSPAR Commission as posing little or no risk to the environment (PLONOR) and an extensive review by Johnson et al. (2007) found no evidence of toxic effects of iron in marine sediments. Corrosion products will be concentrated in the sediments around the anchors and will not be readily available to fauna in the upper 30 cm, where most infauna occur (Kristensen et al., 2012). Alloying metals may be present in low percentages which may include toxicants identified by the <i>Australian and New Zealand Guidelines for Fresh and Marine Water Quality</i> (Commonwealth of Australia and New Zealand Government, 2018). Refer to Sections 8.1, 8.2 and 8.3 for more information on the impacts of decommissioning <i>in situ</i> of the DTM anchors and residual chains on sediment quality.	Less Preferred
	Water Quality	Short-term	Removal of the DTM anchors and residual chains will result in substantial resuspension of sediments as the anchors are pulled from the seabed and recovered to a vessel. This will result in a short-term increase in suspended sediments in the water column, which will return to normal levels within hours to days following completion of the activity.	Neutral	No impacts to water quality in the short-term. Hence this alternative is more preferred than removal.	More Preferred

Criteria	Sub-criteria	Short- and Long-term Considerations	Base Case Justification	Base Case Score	Decommissioning <i>In Situ</i> Justification	Decommissioning <i>In Situ</i> Score
			<p>Vessel operations for the removal base case will result in utility discharges. Impacts to water quality from vessel utility discharges may include:</p> <ul style="list-style-type: none"> • Increased nutrients • Increased biochemical oxygen demand. • Increased turbidity • Reduced visual amenity. • Increased potential contaminants such as hydrocarbons and chemicals. <p>The open water environment receiving utility discharges is expected to result in rapid mixing of utility discharges from vessels. As a result, the potential impacts to water quality will be highly localised and restricted to the immediate area (i.e., 10's to 100's of metres) around the discharge point.</p> <p>Removal is the base case; hence it is neither preferred nor not preferred.</p>			
		Long-term	<p>No impacts to water quality following completion of the removal activities.</p> <p>Removal is the base case; hence it is neither preferred nor not preferred.</p>	Neutral	No impacts to water quality in the long-term. The degradation products are insoluble in seawater and buried within the sediments. Hence this alternative is equally preferred compared to removal.	Neutral
Social	Other Users	Short-term	<p>The removal activities may temporarily displace other users from WA-32-L, although there is very little activity by other users in WA-32-L (Section 5.6).</p> <p>Removal is the base case; hence it is scored neutral.</p>	Neutral	No potential for displacement of other users as no vessel activities required. Hence this alternative is preferred to removal.	More Preferred
		Long-term	<p>No impacts to other users following removal.</p> <p>Removal is the base case; hence it is scored neutral.</p>	Neutral	The DTM anchors and residual chains are entirely buried (as confirmed by ROV footage obtained in July 2023) and hence are not expected to not pose a snagging risk to trawled fishing gear. The presence of the DTM anchors and residual chains is not expected to prevent other uses (e.g., renewable energy generation or other petroleum activities) in future.	Neutral

Table 3-6: Alignment with Principles of ESD for decommissioning of the DTM anchors and residual chains

Principles of ESD	Removal	Decommissioning <i>In situ</i>
<p>Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations</p>	<p>The decision-making process by which the feasible alternatives decommissioning options for the DTM anchors and residual chain were assessed considers environmental (e.g., water and sediment quality), social (e.g., the rights of other users of the marine environment) and equitable (e.g., the rights of other users of the marine environment) criteria. Short-term (i.e., during decommissioning activities) and long-term (i.e., following the decommissioning activities) timeframes have been explicitly considered in the options assessment. Woodside has considered the economics of the feasible decommissioning options; however, this is not presented in the comparative assessment as NOPSEMA’s Section 572 Maintenance and Removal of Property (NOPSEMA, 2022) policy only considers the relative environmental outcomes of decommissioning options. Hence, the assessment of the feasible decommissioning alternative options including both removal and decommissioning <i>in situ</i> is consistent with this principle of ESD.</p>	
<p>If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation</p>	<p>As described in the options assessment presented above, there are short term impacts and risks associated with the removal option including those arising from vessel use and the anchor removal itself (seabed disturbance, disturbance to benthic habitats and infauna). Removal of the DTM anchors and residual chains removes the long-term impacts associated with leaving the anchors <i>in situ</i>, such as long-term corrosion and release of materials into the marine environment. There is no threat of serious or irreversible damage associated with removal of the DTM anchors and residual chains. Hence, the assessment of the removal base case is consistent with this principle of ESD.</p>	<p>The decommissioning <i>in situ</i> alternative option will result in the degradation of the DTM anchors and residual chains over hundreds to thousands of years. The materials from which the anchors and residual chains are made are well known. Degradation causes (e.g., galvanic and microbial induced corrosion) are well understood. The anchors will remain buried within the sediments.</p> <p>Given the nature and scale of potential environmental impacts from degradation of DTM anchors and residual chains, there is no threat of serious or irreversible environmental damage from the decommissioning <i>in situ</i> option. Hence, the assessment of the decommissioning <i>in situ</i> option is consistent with this principle of ESD.</p>
<p>The principle of inter-generational equity – that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations</p>	<p>Removal of the DTM anchors and residual chains will cause disturbance of the seabed, but this will recover over time through natural sedimentary processes. There are no long-term impacts to the environment that would impact upon the health, diversity</p>	<p>The decommissioning <i>in situ</i> of the DTM anchors and residual chains will not reduce the health, diversity and productivity of the environment such that future generations would not benefit from the environment. The decommissioning <i>in situ</i> of the DTM anchors affects a small area of the seabed and the locations of the anchors is known. Future uses of the seabed (e.g.,</p>

Principles of ESD	Removal	Decommissioning <i>In situ</i>
	<p>and productivity of the environment. Hence, the assessment of the removal option is consistent with this principle of ESD.</p>	<p>installation of offshore structures) can avoid the DTM anchors and residual chains, and displacement of future uses would be on the scale of tens to hundreds of metres only. The anchors are expected to remain buried in perpetuity. Hence, the assessment of the decommissioning <i>in situ</i> option is consistent with this principle of ESD.</p>
<p>The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making</p>	<p>The environmental criteria either relate to biological diversity and ecological integrity (e.g., fauna, benthic habitat) or are strongly connected to biological diversity and ecological integrity (e.g., water and sediment quality). Hence, the assessment of the feasible decommissioning options is consistent with this principle of ESD.</p>	
<p>Improved valuation, pricing and incentive mechanisms should be promoted</p>	<p>Woodside’s waste management hierarchy incentivises the reuse, repurposing and recycling of the DTM anchors and residual chains. These arrangements are reflected in Woodside’s contracting strategies. Removal of the DTM anchors and residual chains provides the greater potential for reuse, repurposing and recycling compared to decommissioning <i>in situ</i> option. The decommissioning <i>in situ</i> decommissioning option scores relatively poorly when compared to the removal. Hence, the assessment of the feasible decommissioning options including both removal and decommissioning <i>in situ</i> is consistent with this principle of ESD.</p>	

Table 3-7: Assessment of DTM anchors decommissioning options against relevant legislation and guidelines.

Relevant Requirements	Removal	Decommissioning <i>In Situ</i>
Offshore Petroleum and Greenhouse Gas Storage (OPGGS) Act 2006		
<ul style="list-style-type: none"> Section 572 requires titleholders to remove structures, equipment and property that are no longer being used in connection with operations authorised by the title (subject to any other provisions of the Act, the regulations, a direction by NOPSEMA and any other law). Section 270 requires titleholders to remove all infrastructure before the title can be surrendered or to make alternative arrangements that are satisfactory to NOPSEMA in relation to that infrastructure. 	<p>The removal of the DTM anchors and residual chains meets requirements under the OPGGS Act for removal from the title area.</p>	<p>The case for leaving the DTM anchors and mooring chains <i>in situ</i> needs to be to the satisfaction of NOPSEMA and approved through acceptance of this EP.</p>
Environment Regulations		
<p>Under the OPGGS Act 2006, the Environment Regulations ensure that any petroleum activity or greenhouse gas activity carried out in an offshore area is:</p> <ul style="list-style-type: none"> Carried out in a manner consistent with the principles of ecologically sustainable development set out in section 3A of the EPBC Act. 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). Carried out in a manner by which the environmental impacts and risks of the activity will be of an acceptable level. 	<p>Removal meets commitments under the Environment Regulations for removal from the title area.</p>	<p>Leaving DTM anchors and residual chains <i>in situ</i> meets requirements under the Environment Regulations for petroleum and greenhouse gas activities carried out in an offshore area as follows:</p> <ul style="list-style-type: none"> This EP contains an assessment that determines consistency with the principles defined in Section 3A of the EPBC Act for partial removal of infrastructure. This EP contains an ALARP assessment for the environmental impacts and risks. This EP contains an evaluation that environmental impacts and risks relating to decommissioning <i>in situ</i> of infrastructure will be managed to an acceptable level.

Relevant Requirements	Removal	Decommissioning <i>In Situ</i>
Guideline: Offshore Petroleum Decommissioning (Department of Industry, Science, Energy and Resources, 2022)		
<p>The <i>Guideline: Offshore Petroleum Decommissioning</i> (Department of Industry, Science, Energy and Resources, 2022) states that removal of infrastructure is the default decommissioning requirement under the OPGGS Act. The guideline also states that alternative decommissioning options other than removal may be considered; however, the titleholder must demonstrate in permissioning documents that the alternative approach delivers equal or better environmental outcomes compared to complete removal and other applicable laws.</p>	<p>Removal meets base case requirements for decommissioning.</p>	<p>The decommissioning <i>in situ</i> option is shown to yield equal or better environmental outcomes than removal and is the petroleum activity proposed in this EP. This EP identifies a range of relevant requirements (e.g., Section 2). Demonstrations that the petroleum activity will comply with relevant requirements are made throughout the EP (e.g., the acceptability demonstrations in the assessment of environmental impacts).</p>
Policy: Section 572 Maintenance and Removal of Property (NOPSEMA, 2022)		
<p>NOPSEMA's <i>Section 572 Maintenance and Removal of Property</i> (2022) policy proposes that a deviation from the base case of removal can be sought. Arrangements other than removal of property will only be accepted where they are appropriate having regard to applicable legislation, relevant Australian Government guidelines and policy.</p> <p>Specifically, the titleholder must demonstrate that the alternative decommissioning approach meets all applicable requirements under the OPGGS Act and regulations, any other legislative requirement, and relevant international obligations.</p>	<p>Removal is assumed to meet the requirements of the Environment Regulations.</p>	<p>This EP identifies a range of relevant requirements (e.g., Section 2), including relevant Australian Government guidelines and policy. Demonstrations that the petroleum activity (i.e., decommissioning <i>in situ</i>) will comply with relevant requirements are made throughout the EP (e.g., the acceptability demonstrations in the assessment of environmental impacts).</p>
Environment Protection and Biodiversity Conservation Act 1999		
<p>The EPBC Act requires that the petroleum activity consider:</p>	<p>Removal of infrastructure meets requirements under the EPBC Act, as:</p>	<p>Decommissioning <i>in situ</i> of the DTM anchors and residual chains meets requirements under the EPBC Act, as:</p>

Relevant Requirements	Removal	Decommissioning <i>In Situ</i>
<ul style="list-style-type: none"> Matters of national environmental significance, such as threatened and migratory species and the Commonwealth marine environment. The principles of ESD. 	<ul style="list-style-type: none"> it will not likely result in unacceptable impacts to MNES, such as threatened or migratory fauna or the Commonwealth marine environment. it is not inconsistent with plans made under the EPBC Act (e.g., recovery and threat abatement plans) it is consistent with the principles of ESD. 	<ul style="list-style-type: none"> It will not likely result in unacceptable impacts to MNES, such as threatened or migratory fauna or the Commonwealth marine environment. It is not inconsistent with plans made under the EPBC Act (e.g., recovery and threat abatement plans) It is consistent with the principles of ESD. <p>Demonstrations of the points above are provided throughout the EP (e.g., the acceptability demonstrations in the assessment of environmental impacts)</p>
<i>Environment Protection (Sea Dumping) Act 1981</i>		
<p>Section 10A of the <i>Environment Protection (Sea Dumping) Act 1981</i> requires a permit to be obtained for the dumping of controlled material into Australian waters.</p> <p><i>'Controlled material' is defined in the Environment Protection (Sea Dumping) Act 1981 as 'waste or other material (within the meaning of the Protocol [meaning the London Protocol]'</i></p> <p>The London Protocol states that sea dumping does not include <i>"the abandonment in the sea of matter (e.g., cables, pipelines and marine research devices) placed for a purpose other than the mere disposal thereof"</i>.</p>	<p>Removal of infrastructure does not trigger requirements under the <i>Environment Protection (Sea Dumping) Act 1981</i>, considering infrastructure will be removed from the marine environment.</p>	<p>Prior to permanently leaving structures considered in this EP <i>in situ</i>, Woodside anticipates obtaining a Sea Dumping Permit in accordance with the requirements of the <i>Environment Protection (Sea Dumping) Act 1981</i>.</p>
International Maritime Organisation (IMO) Resolution A.672(16) - Guidelines and standards for the Removal of Offshore Installations and Structures on the Continental Shelf and the Exclusive Economic Zone adopted 1989¹		
<p>Relevant paragraphs of IMO Resolution A.672 (16) contain the following requirements:</p> <ul style="list-style-type: none"> Infrastructure within specified water depths (above 75 and 100 m) should be completely removed (paragraphs 3.1 and 3.2). 	<p>Meets requirements for removal of decommissioned or disused installations or structures.</p>	<p>Leaving the infrastructure meets all the relevant requirements of IMO Resolution A.672 (16) as follows:</p> <ul style="list-style-type: none"> The depth of water where the infrastructure is located is > 800 m and therefore deeper than

Relevant Requirements	Removal	Decommissioning <i>In Situ</i>
<ul style="list-style-type: none"> Infrastructure left <i>in situ</i> should not cause unjustifiable interference with other uses of the sea (paragraph 3.4.2). Structures left <i>in situ</i> should be marked on navigational charts (paragraph 3.8). Structures left <i>in situ</i> should remain on location and not move (paragraph 3.9). Structures left <i>in situ</i> should be monitored, as necessary, for compliance against these guidelines (paragraph 3.10). Responsibility for maintenance and liability for future damages from structures left <i>in situ</i> should be clearly established (paragraph 3.11). 		<p>the depths paragraphs 3.1 and 3.2 recommend removal.</p> <ul style="list-style-type: none"> Physical presence of the infrastructure will not result in a potential impact greater than a minor disturbance to other users as assessed in Section 8.1. Woodside commits to notifying Australian Hydrographic Office (AHO) to ensure the infrastructure remain marked on navigation charts; refer to Section 8.1. The infrastructure is in a fixed position buried below the seabed and will therefore not move from this location. Periodic monitoring has been determined not to be required to ensure ongoing compliance against IMO Resolution A.672 (16). This is on the basis that degradation of the subsea infrastructure will occur over a significantly long time by which the rate of change is predicted to be slow and unlikely to be easily detected over short to medium timeframes making ongoing monitoring impractical. No ongoing maintenance is required beyond decommissioning of the infrastructure. Demonstration against Section 270 requirements is summarised in Stybarrow Decommissioning and Field Management EP.

¹ IMO Resolution A.672(16) sets out the matters to be considered by State parties to UNCLOS when making decisions dealing with decommissioned or disused installations on the Continental Shelf. Australia’s decommissioning policies consider the requirements of IMO Resolution A.672(16) (Department of Industry, Science, Energy and Resources, 2022).

3.2.3 Suction Piles

A description of the suction piles is provided in **Section 4.8.2**.

3.2.3.1 Technical Feasibility of Decommissioning Options

The feasible decommissioning alternatives for the suction piles are summarised in **Table 3-8**. Decommissioning *in situ* is the only feasible alternative to removal.

Table 3-8: Summary descriptions of the feasible decommissioning alternatives identified for the suction piles.

Decommissioning Alternative	Description and Feasibility
Removal	<p>Feasible</p> <p>The suction piles are buried within the seabed and were installed by lowering the pile to the seabed and creating a low pressure within the pile by pumping water from the caisson formed by the pile. The piles would likely be removed by reversing this process by:</p> <ul style="list-style-type: none"> • securing lifting apparatus to the pile • pumping water into the pile (either through an existing or a newly drilled orifice) while tensioning the lifting life to raise the pile from the seabed. • recovering the pile to a vessel. <p>This method is the removal base case. However, if this method was found to not be feasible, the suction piles would be removed through excavation, which would involve substantial sediment relocation and lifting capacity to free the pile from the seabed.</p>
Partial removal	<p>Not feasible</p> <p>The suction piles are nearly entirely buried within the seabed. The tops of the piles are closed, which prohibits access for a cutting tool to make an internal cut (such as may be done by a hollow driven pile). The tops of the suction piles do not protrude sufficiently cutting tools (e.g., a diamond wire cutter) to remove the part of the pile above the sediment. Extensive sediment relocation would be required to provide access for suitable cutting tools, like the sediment relocation required for removal; hence removal would be undertaken instead of partial removal. As such, partial removal of the suction piles is not feasible.</p>
Decommissioning <i>in situ</i>	<p>Feasible</p> <p>The decommissioning <i>in situ</i> alternative will leave the suction piles as they are in the seabed at the conclusion of the equipment removal campaign described in the Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003), with all attachments removed (e.g., riser holdback clamps).</p> <p>No vessel activities will be required as part of the decommissioning <i>in situ</i> alternative for the suction piles.</p>
Additional structures	<p>Not feasible</p> <p>Augmentation relies on substantial habitat being provided by the existing equipment. The suction piles are buried in the seabed with little available hard substrate to augment. Augmentation typically benefits other users (e.g.,</p>

Decommissioning Alternative	Description and Feasibility
	commercial and recreational fishers), which would have difficulty accessing the augmentation structures due to the offshore location and water depth.

3.2.3.2 Decommissioning Options Assessment

A summary of the decommissioning options assessment for the suction piles is provided in **Table 3-9**. The assessment is provided in full in **Table 3-10**. The assessment indicates that decommissioning *in situ* results in equal or better environmental outcomes than removal of the suction piles. It is therefore proposed that the suction piles are decommissioned *in situ*.

Table 3-9: Summary of evaluation of decommissioning alternatives for the suction piles

Criteria	Sub-criteria	Removal		Decommissioning In <i>Situ</i>	
		Short-term	Long-term	Short-term	Long-term
Environment	Benthic Habitats	Neutral	Neutral	More Preferred	Neutral
	Fauna	Neutral	Neutral	More Preferred	Neutral
	GHG Emissions (excluding waste management)	Neutral	Neutral	More Preferred	Neutral
	Materials Management	Neutral	Neutral	Less Preferred	Less Preferred
	Sediment Quality	Neutral	Neutral	Neutral	Less Preferred
	Water Quality	Neutral	Neutral	More Preferred	Neutral
Social	Other Users	Neutral	Neutral	More Preferred	Less Preferred

Table 3-10: Evaluation of decommissioning alternatives for the suction piles

Criteria	Sub-criteria	Short- and Long-term Considerations	Base Case Justification	Base Case Score	Decommissioning <i>In Situ</i> Justification	Decommissioning <i>In Situ</i> Score
Environment	Benthic Habitats	Short-term	Removal of the suction piles will result in localised disturbance of the benthic habitats around the piles. The sediments surrounding the suction piles will slump into depressions left by removal of the piles, resulting in a disturbance footprint larger than the suction piles themselves. As most of the sediment within the piles will be displaced from within the pile during removal, depressions in the seabed will be substantially smaller than the volume of the piles. The benthic habitats around the suction piles are comprised of unconsolidated silty sediments characterised by infauna and sparse epifauna (Section 5.3.2). This habitat is very widely represented in the region and does not hold significant conservation value. Removal is the base case; hence it is neither preferred nor not preferred.	Neutral	No activities would be required and therefore no disturbance to benthic habitats. Existing habitat retained. The preservation of benthic habitat results in this decommissioning option being preferred relative to removal.	More Preferred
		Long-term	Benthic habitats will recover over time following removal of the suction piles, which will be consistent with the natural state prior to the Stybarrow development and the surrounding benthic habitat. Removal eliminates the release of degradation products. Removal is the base case; hence it is neither preferred nor not preferred.	Neutral	The decommissioning <i>in situ</i> alternative will preserve the benthic habitats and associated species around the suction piles. These unconsolidated sediment habitats and associated biota are widely represented in the region. The suction piles will degrade over a prolonged period (hundreds to thousands of years) due to the low levels of oxygen in sediments and the protective effect of the layers of corrosion. Rust from corrosion of steel will be deposited in the sediments immediately around the piles which are mostly buried. This will occur over a prolonged period (hundreds to thousands of years) due to the low levels of oxygen in sediments and the protective effect of layers of corrosion and paint. The steel used in the suction piles is carbon steel, with relatively low quantities of alloying materials (refer to sediment quality criterion for a consideration of sediment contamination). Most of the degradation products will be buried and not readily available to biota. Cardno (2019) observed increased diversity and abundance of fauna associated with exposed equipment (such as the tops of the suction piles) compared to buried equipment and areas without equipment. Given the relatively small area of exposed substrate provided by the suction piles, the increase in habitat diversity of decommissioning <i>in situ</i> will be relatively small. Refer to Sections 8.1, 8.2 and 8.3 for more information on the impacts of decommissioning <i>in situ</i> of the suction piles.	Neutral
	Fauna	Short-term	The removal base case will entirely remove the suction piles. Mobile fauna associated with the piles, such as fishes, will be displaced by the removal of the piles. Sessile or slow-moving fauna associated with the suction piles and the habitat around the piles will be lost during removal activities. The fauna impacted are widely represented in the region and not of significant conservation value. Vessel and helicopters will generate noise in the air and underwater during decommissioning activities. The main source of noise would be from a DP vessel relating to use of DP thrusters. Listed threatened and migratory species that could be potentially impacted by noise and vibration may be present within the water column above the suction piles, primarily cetaceans, sharks and turtles. The suction piles are located in a pygmy blue whale migration biologically important area (BIA) and wedge-tailed shearwater breeding BIA.	Neutral	As there would be no activities required, there would be disturbance to, or loss of, fauna associated with the decommissioning <i>in situ</i> in the short-term. Hence this option is preferred compared to removal.	More Preferred

Criteria	Sub-criteria	Short- and Long-term Considerations	Base Case Justification	Base Case Score	Decommissioning <i>In Situ</i> Justification	Decommissioning <i>In Situ</i> Score
			Given the noise levels associated with routine operations of the vessel, the potential impacts on marine fauna are unlikely to cause hearing impairment in marine mammals, reptiles or fishes, such as permanent and temporary threshold shifts (Popper et al., 2014; Southall et al., 2021, 2019). However, there is the potential for behavioural disturbance and masking to occur. Behavioural impacts will depend on the audible frequency range of each potential receptor in relation to the frequency of the noise, as well as the intensity of the noise. Removal of the suction piles would be completed in 1-2 days, so behavioural impacts would be restricted to during this time. It is considered noise generated by the vessel and helicopter activities may result in minor, localised, temporary impacts to marine fauna.			
		Long-term	<p>Fauna communities impacted by the removal of the suction piles will recover following removal through natural recruitment and movement of animals. The resulting fauna community would resemble surrounding natural areas after a sufficient period. Hence, the impacts to fauna from removal would only affect a relatively small portion of the community and ecosystem services would not be affected.</p> <p>Observations of benthic fauna by Cardno (2019) documented relatively abundant and diverse fauna assemblages on exposed equipment, such as the tops of the suction piles, compared to buried equipment and unconsolidated sediment habitat in the Stybarrow field. Removal of the suction piles would result in a long-term decrease in the biodiversity and abundance of fauna in the Stybarrow field.</p>	Neutral	<p>The suction piles will degrade over time. Given the equipment is made from steel and buried, impacts of degradation on fauna will be negligible. Iron and carbon, which are typically 97% of carbon steel by mass pose little risk to the environment. Iron (II) and (III) oxides (i.e., rust) are listed by the OSPAR Commission as posing little or no risk to the environment (PLONOR) and an extensive review by Johnson et al. (2007) found no evidence of toxic effects of iron in marine sediments. Alloying metals may be present in low percentages which may include toxicants identified by the <i>Australian and New Zealand Guidelines for Fresh and Marine Water Quality</i> (Commonwealth of Australia and New Zealand Government, 2018). Concentrations of metals above the concentrations that may result in toxic effects are expected to be restricted to within approximately 21 m radius from the piles (refer to Section 8.2).</p> <p>The degradation products from the suction piles will mostly be buried and will not interact with mobile fauna, with approximately 11% of the pile available to interact with fauna following complete degradation. Infauna have the greatest likelihood of interacting with degradation products given they are associated with sediments. Most infauna are restricted to the upper 30 cm of sediment (Kristensen et al., 2012).</p> <p>Cardno (2019) found greater diversity and abundance of fauna associated with equipment providing hard substrate and relatively complex structure, such as the suction piles. However, this effect will be localised given the relatively small area of hard substrate provided by the piles.</p> <p>Decommissioning <i>in situ</i> may increase biodiversity and abundance of fauna (from physical presence) which is considered a benefit, while also introducing potential toxicants, which is a detriment. Hence this alternative is neutral compared to removal.</p> <p>Refer to Sections 8.1, 8.2 and 8.3 for more information on the impacts of decommissioning <i>in situ</i> of the suction piles on fauna.</p>	Neutral
	GHG Emissions (excluding waste management)	Short-term	<p>The removal base case would be implemented as part of an equipment removal campaign, with GHG emissions limited to the additional sea time required to complete the removal activities. Atmospheric emissions from vessels undertaking the removal base case will result in a localised decrease in air quality due to exhaust emissions from internal combustion engines.</p> <p>Fuel combustion onboard vessels will generate carbon dioxide emissions, which is a GHG.</p>	Neutral	<p>The decommissioning <i>in situ</i> alternative does not generate GHG or atmospheric emissions during the removal campaign. Hence this alternative is preferred compared to removal.</p>	More Preferred

Criteria	Sub-criteria	Short- and Long-term Considerations	Base Case Justification	Base Case Score	Decommissioning <i>In Situ</i> Justification	Decommissioning <i>In Situ</i> Score
			Removal is the base case; hence it is neither preferred nor not preferred.			
		Long-term	No GHG emissions (excluding materials management) following removal of the equipment. Removal is the base case; hence it is neither preferred nor not preferred.	Neutral	The decommissioning <i>in situ</i> alternative does not generate or offset GHG or atmospheric emissions following the removal campaign. Hence this alternative is neutral compared to the removal base case.	Neutral
	Materials Management	Short-term	The removal base case provides the opportunity to re-use, repurpose or recycle the suction piles. These all sit above disposal in the waste management hierarchy. Removal is the base case; hence it is scored neutral.	Neutral	There is no opportunity to reuse, repurpose or recycle the suction piles when implementing the decommissioning <i>in situ</i> option. The alternative scores lower in the waste management hierarchy than removal, hence it is less preferred.	Less Preferred
		Long-term	The removal base case provides the opportunity to re-use, repurpose or recycle the suction piles. These all sit above disposal in the waste management hierarchy. Removal is the base case; hence it is scored neutral.	Neutral	There is no opportunity to reuse, repurpose or recycle the suction piles when implementing the decommissioning <i>in situ</i> option. The alternative scores lower in the waste management hierarchy than removal, hence it is less preferred.	Less Preferred
	Sediment Quality	Short-term	Some sediment resuspension would occur during removal of the suction piles. Contaminant levels around the suction piles are consistent with reference sites several kilometres from the Stybarrow equipment, hence sediment resuspension will not remobilise contaminants.	Neutral	No impacts to sediment quality in the short-term.	Neutral
		Long-term	No impacts to sediment quality in the long term. Removal is the base case; hence it is scored neutral.	Neutral	The degradation of the suction piles will impact sediment quality. The steel used in the suction piles is carbon steel (typically 97% carbon and iron by mass), with relatively low quantities of alloying materials and pose little or no risk to the environment. Iron (II) and (III) oxides (i.e., rust) are listed by the OSPAR Commission as posing little or no risk to the environment (PLONOR) and an extensive review by Johnson et al. (2007) found no evidence of toxic effects of iron in marine sediments. Corrosion products will be concentrated in the sediments around the piles, with corrosion products in the upper 30 cm of the sediment potentially interacting with fauna, where most infauna occur (Kristensen et al., 2012). Parts of the suction piles are coated with a thin (450 micron) layer of epoxy paint. Paint flakes, which are negatively buoyant, may also impact upon sediment quality. Copper, chromium and nickel are recognised toxicants in the <i>Australian and New Zealand Guidelines for Fresh and Marine Water Quality</i> (Commonwealth of Australia and New Zealand Government, 2018). Concentrations above the guideline values of these metals may occur up to approximately 21 m radius around the piles following complete degradation, with the exception of nickel, which naturally exceeds the default guideline values (Figure 5-4). Refer to Sections 8.1, 8.2 and 8.3 for more information on the impacts of decommissioning <i>in situ</i> of the suction piles on sediment quality.	Less Preferred
	Water Quality	Short-term	Removal of the suction piles will result in resuspension of sediments as the piles are pulled from the seabed and recovered to a vessel. This will result in a short-term increase in suspended sediments in the water column, which will return to normal levels within days following completion of the activity.	Neutral	No impacts to water quality in the short-term. Hence this alternative is more preferred than removal.	More Preferred

Criteria	Sub-criteria	Short- and Long-term Considerations	Base Case Justification	Base Case Score	Decommissioning <i>In Situ</i> Justification	Decommissioning <i>In Situ</i> Score
			<p>Vessel operations for the removal base case will result in utility discharges. Impacts to water quality from vessel utility discharges may include:</p> <ul style="list-style-type: none"> • increased nutrients • increased biochemical oxygen demand. • increased turbidity • reduced visual amenity. • increased potential contaminants such as hydrocarbons and chemicals. <p>The open water environment receiving utility discharges is expected to result in rapid mixing of utility discharges from vessels. As a result, the potential impacts to water quality will be highly localised and restricted to the immediate area (i.e., 10's to 100's of metres) around the discharge point.</p> <p>Removal is the base case; hence it is neither preferred nor not preferred.</p>			
		Long-term	<p>No impacts to water quality following completion of the removal activities.</p> <p>Removal is the base case; hence it is neither preferred nor not preferred.</p>	Neutral	No impacts to water quality in the long-term. The degradation products are insoluble in seawater and largely buried within the sediments. Hence this alternative is equally preferred compared to removal.	Neutral
Social	Other Users	Short-term	<p>The removal activities may temporarily displace other users from WA-32-L although there is very little activity by other users in WA-32-L (Section 5.6).</p> <p>Removal is the base case; hence it is scored neutral.</p>	Neutral	No potential for displacement of other users as no vessel activities required. Hence this alternative is preferred to removal.	More Preferred
		Long-term	<p>No impacts to other users following removal.</p> <p>Removal is the base case; hence it is scored neutral.</p>	Neutral	The suction piles are largely buried; however, the exposed sections of the piles may pose a risk to trawled fishing gear. However, there is no demersal or benthic trawl fishing in WA-32-L historically. The risk to trawl fishing gear is mitigated through consultation and inclusion of the piles on nautical charts. The presence of the suction piles is not expected to prevent other uses (e.g., renewable energy generation or other petroleum activities) in future.	Less Preferred

Table 3-11: Alignment with principles of ESD for decommissioning of the suction piles

Principles of ESD	Removal	Decommissioning <i>In situ</i>
<p>Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations</p>	<p>The decision-making process by which the feasible alternatives decommissioning options for the suction piles were assessed considers environmental (e.g., water and sediment quality), social (e.g., the rights of other users of the marine environment) and equitable (e.g., the rights of other users of the marine environment) criteria. Short-term (i.e., during decommissioning activities) and long-term (i.e., following the decommissioning activities) timeframes have been explicitly considered in the options assessment. Woodside has considered the economics of the feasible decommissioning options; however, this is not presented in the comparative assessment as the <i>Guideline: Offshore Petroleum Decommissioning</i> (Department of Industry, Science, Energy and Resources, 2022) only considers the relative environmental outcomes of decommissioning options. Hence, the assessment of the feasible decommissioning alternative options including both removal and decommissioning <i>in situ</i> is consistent with this principle of ESD.</p>	
<p>If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation</p>	<p>As described in the options assessment presented above, there are short term impacts and risks associated with the removal option including those arising from vessel use and the suction pile removal itself (seabed disturbance, disturbance to benthic habitats and infauna). Removal of the suction piles eliminates the long-term impacts associated with leaving the piles <i>in situ</i>, such as long-term corrosion and release of materials into the marine environment. There is no threat of serious or irreversible damage associated with removal of the suction piles. Hence, the assessment of the removal base case is consistent with this principle of ESD.</p>	<p>The decommissioning <i>in situ</i> option will result in the degradation of the piles over hundreds to thousands of years. The materials from which the piles are made are well known, including the relative portions of alloying materials in the steel, of which copper, chromium and nickel have established guideline values for sediments in the <i>Australian and New Zealand Guidelines for Fresh and Marine Water Quality</i> (Commonwealth of Australia and New Zealand Government, 2018). Although concentrations of these contaminants may be elevated above guideline values in the immediate vicinity of infrastructure, serious or irreversible environmental damage is not considered credible due to the spatial and temporal extent of potential impacts. Degradation causes (e.g., galvanic and microbial induced corrosion) are well understood. The piles will remain mostly (~89%) buried within the sediments.</p> <p>Given the nature and scale of potential environmental impacts from degradation of suction piles, there is no threat of serious or irreversible environmental damage from the decommissioning <i>in situ</i> option. Hence, the assessment of the decommissioning <i>in situ</i> option is consistent with this principle of ESD.</p>
<p>The principle of inter-generational equity – that the present generation should ensure that the health, diversity and</p>	<p>Removal of the suction piles will cause disturbance of the seabed, but this will recover over time through natural sedimentary processes. There are no long-term impacts to the environment that would impact upon the health, diversity and productivity of the environment. Hence, the assessment of the removal option is consistent with this principle of ESD.</p>	<p>The decommissioning <i>in situ</i> of the suction piles will not reduce the health, diversity and productivity of the environment such that future generations would not benefit from the environment. The decommissioning <i>in situ</i> of the suction piles affects a small area of the seabed and the locations of the piles is known. Future uses of the seabed (e.g., installation of offshore structures) can avoid the</p>

Principles of ESD	Removal	Decommissioning <i>In situ</i>
<p>productivity of the environment is maintained or enhanced for the benefit of future generations</p>		<p>suction piles, and displacement of future uses would be on the scale of tens to hundreds of metres only. Hence, the assessment of the decommissioning <i>in situ</i> option is consistent with this principle of ESD.</p>
<p>The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making</p>	<p>The environmental criteria either relate to biological diversity and ecological integrity (e.g., fauna, benthic habitat) or are strongly connected to biological diversity and ecological integrity (e.g., water and sediment quality). Hence, the assessment of the feasible decommissioning options is consistent with this principle of ESD.</p>	
<p>Improved valuation, pricing and incentive mechanisms should be promoted</p>	<p>Woodside’s waste management hierarchy incentivises the reuse, repurposing and recycling of the suction piles. These arrangements are reflected in Woodside’s contracting strategies. Removal of the suction piles provides the greater potential for reuse, repurposing and recycling compared to decommissioning <i>in situ</i> option. The decommissioning <i>in situ</i> decommissioning option scores relatively poorly when compared to the removal. Hence, the assessment of the feasible decommissioning options is consistent with this principle of ESD.</p>	

Table 3-12: Assessment of suction piles decommissioning options against relevant legislation and guidelines.

Relevant Requirements	Removal	Decommissioning <i>In Situ</i>
OPGGS Act		
<ul style="list-style-type: none"> Section 572 requires titleholders to remove structures, equipment and property that are no longer being used in connection with operations authorised by the title (subject to any other provisions of the Act, the regulations, a direction by NOPSEMA and any other law). Section 270 requires titleholders to remove all infrastructure before the title can be surrendered or to make alternative arrangements that are satisfactory to NOPSEMA in relation to that infrastructure. 	<p>The removal of the suction piles meets requirements under the OPGGS Act for removal from the title area.</p>	<p>The case for leaving the suction piles <i>in situ</i> needs to be to the satisfaction of NOPSEMA and approved through acceptance of this EP.</p>
Environment Regulations		
<p>Under the OPGGS Act 2006, the Environment Regulations ensure that any petroleum activity or greenhouse gas activity carried out in an offshore area is:</p> <ul style="list-style-type: none"> Carried out in a manner consistent with the principles of ecologically sustainable development set out in section 3A of the EPBC Act. 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). Carried out in a manner by which the environmental impacts and risks of the activity will be of an acceptable level. 	<p>Removal is assumed to meet the requirements of the Environment Regulations.</p>	<p>Leaving suction piles <i>in situ</i> meets requirements under the Environment Regulations for petroleum and greenhouse gas activities carried out in an offshore area as follows:</p> <ul style="list-style-type: none"> This EP contains an assessment that determines consistency with the principles defined in Section 3A of the EPBC Act for partial removal of infrastructure. This EP contains an ALARP assessment for the environmental impacts and risks. This EP contains an evaluation that environmental impacts and risks relating to decommissioning <i>in situ</i> of infrastructure will be managed to an acceptable level.

Relevant Requirements	Removal	Decommissioning <i>In Situ</i>
Guideline: Offshore Petroleum Decommissioning (Department of Industry, Science, Energy and Resources, 2022)		
<p>The <i>Guideline: Offshore Petroleum Decommissioning</i> (Department of Industry, Science, Energy and Resources, 2022) states that removal of infrastructure is the default decommissioning requirement under the OPGGS Act. The guideline also states that alternative decommissioning options other than removal may be considered; however, the titleholder must demonstrate in permissioning documents that the alternative approach delivers equal or better environmental outcomes compared to complete removal and other applicable laws.</p>	<p>Removal meets base case requirements for decommissioning.</p>	<p>The decommissioning <i>in situ</i> option is shown to yield equal or better environmental outcomes than removal and is the petroleum activity proposed in this EP. This EP identifies a range of relevant requirements (e.g., Section 2). Demonstrations that the petroleum activity will comply with relevant requirements are made throughout the EP (e.g., the acceptability demonstrations in the assessment of environmental impacts).</p>
Policy: Section 572 Maintenance and Removal of Property (NOPSEMA, 2022)		
<p>NOPSEMA's <i>Section 572 Maintenance and Removal of Property</i> (2022) policy proposes that a deviation from the base case of removal can be sought. Arrangements other than removal of property will only be accepted where they are appropriate having regard to applicable legislation, relevant Australian Government guidelines and policy.</p> <p>Specifically, the titleholder must demonstrate that the alternative decommissioning approach meets all applicable requirements under the OPGGS Act and regulations, any other legislative requirement, and relevant international obligations.</p>	<p>Removal meets the requirement in the policy for removal from the title area.</p>	<p>This EP identifies a range of relevant requirements (e.g., Section 2), including relevant Australian Government guidelines and policy. Demonstrations that the petroleum activity (i.e., decommissioning <i>in situ</i>) will comply with relevant requirements are made throughout the EP (e.g., the acceptability demonstrations in the assessment of environmental impacts).</p>

Relevant Requirements	Removal	Decommissioning <i>In Situ</i>
EPBC Act		
<p>The EPBC Act requires that the petroleum activity consider:</p> <ul style="list-style-type: none"> • Matters of national environmental significance, such as threatened and migratory species and the Commonwealth marine environment. • The principles of ESD. 	<p>Removal of infrastructure meets requirements under the EPBC Act, as:</p> <ul style="list-style-type: none"> • it will not likely result in unacceptable impacts to MNES, such as threatened or migratory fauna or the Commonwealth marine environment. • it is not inconsistent with plans made under the Act (e.g., recovery and threat abatement plans) • it is consistent with the principles of ESD. 	<p>Decommissioning <i>in situ</i> of the suction piles meets requirements under the EPBC Act, as:</p> <ul style="list-style-type: none"> • It will not likely result in unacceptable impacts to MNES, such as threatened or migratory fauna or the Commonwealth marine environment. • It is not inconsistent with plans made under the Act (e.g., recovery and threat abatement plans) • It is consistent with the principles of ESD. <p>Demonstrations of the points above are provided throughout the EP (e.g., the acceptability demonstrations in the assessment of environmental impacts)</p>
<i>Environment Protection (Sea Dumping) Act 1981</i>		
<p>Section 10A of the <i>Environment Protection (Sea Dumping) Act 1981</i> requires a permit to be obtained for the dumping of controlled material into Australian waters.</p> <p>'Controlled material' is defined in the <i>Environment Protection (Sea Dumping) Act 1981</i> as 'waste or other material (within the meaning of the Protocol [meaning the London Protocol])'.</p> <p>The London Protocol states that sea dumping does not include "the abandonment in the sea of matter (e.g., cables, pipelines and marine research devices) placed for a purpose other than the mere disposal thereof".</p>	<p>Removal of infrastructure does not trigger requirements under the <i>Environment Protection (Sea Dumping) Act 1981</i>, considering infrastructure will be removed from the marine environment.</p>	<p>Prior to permanently leaving structures considered in this EP <i>in situ</i>, Woodside anticipates obtaining a Sea Dumping Permit in accordance with the requirements of the <i>Environment Protection (Sea Dumping) Act 1981</i>.</p>

Relevant Requirements	Removal	Decommissioning <i>In Situ</i>
<p>International Maritime Organisation (IMO) Resolution A.672(16) - Guidelines and standards for the Removal of Offshore Installations and Structures on the Continental Shelf and the Exclusive Economic Zone adopted 1989¹</p>		
<p>Relevant paragraphs of IMO Resolution A.672 (16) contain the following requirements:</p> <ul style="list-style-type: none"> • Infrastructure within specified water depths (above 75 and 100 m) should be completely removed (paragraphs 3.1 and 3.2). • Infrastructure left <i>in situ</i> should not cause unjustifiable interference with other uses of the sea (paragraph 3.4.2). • Structures left <i>in situ</i> should be marked on navigational charts (paragraph 3.8). • Structures left <i>in situ</i> should remain on location and not move (paragraph 3.9). • Structures left <i>in situ</i> should be monitored, as necessary, for compliance against these guidelines (paragraph 3.10). • Responsibility for maintenance and liability for future damages from structures left <i>in situ</i> should be clearly established (paragraph 3.11). 	<p>Meets requirements for removal of decommissioned or disused installations or structures.</p>	<p>Leaving the infrastructure meets all the relevant requirements of IMO Resolution A.672 (16) as follows:</p> <ul style="list-style-type: none"> • The depth of water where the infrastructure is located is > 800 m and therefore deeper than the depths paragraphs 3.1 and 3.2 recommend removal. • Physical presence of the infrastructure will not result in a potential impact greater than a minor disturbance to other users as assessed in Section 8.1. • Woodside commits to notifying Australian Hydrographic Office (AHO) to ensure the infrastructure remain marked on navigation charts; refer to Section 8.1. • The infrastructure is in a fixed position buried below the seabed and will therefore not move from this location. • Periodic monitoring has been determined not to be required to ensure ongoing compliance against IMO Resolution A.672 (16). This is on the basis that degradation of the subsea infrastructure will occur over a significantly long time by which the rate of change is predicted to be slow and unlikely to be easily detected over short to medium timeframes making ongoing monitoring impractical. • No ongoing maintenance is required beyond decommissioning of the infrastructure. Demonstration against Section 270 requirements is summarised in Stybarrow Decommissioning and Field Management EP.

Relevant Requirements**Removal****Decommissioning *In Situ***

¹ IMO Resolution A.672(16) sets out the matters to be considered by State parties to UNCLOS when making decisions dealing with abandoned or disused installations on the Continental Shelf. Australia's decommissioning policies consider the requirements of IMO Resolution A.672(16) (Department of Industry, Science, Energy and Resources, 2022).

3.2.4 Eskdale-1 Wellhead

A description of the Eskdale-1 wellhead is provided in **Section 4.8.3**.

3.2.4.1 Technical Feasibility of Decommissioning Options

The feasible decommissioning alternatives for the wellhead are summarised in **Table 3-13**. Partial removal and decommissioning *in situ* are the only feasible alternatives to removal.

Table 3-13: Summary descriptions of the feasible decommissioning alternatives identified for the Eskdale-1 wellhead.

Decommissioning Alternative	Description and Feasibility
Removal	<p>Feasible</p> <p>Two previous attempts have been made to removal the wellhead cut and pull the 20 x 30-inch casing in April 2003. The Eskdale -1 end of well report outlines the two failed attempts to remove and details back reaming works conducted to reduce the overpull. An internal cut within the wellhead could not be completed due to excess cutting build-up. Dispensation to leave the wellhead on the seabed was subsequently sought in 2003 from the WA Department of Industry and Resources. It is feasible to conduct another attempt at removing the Eskdale-1 wellhead, however the success of this method is not assured. Removal using an external cut below the mudline would require extensive sediment relocation to provide access for the cutting tool.</p>
Partial removal	<p>Feasible</p> <p>Partial removal of the wellhead would be done by an external cut above the mudline as close as practicable to the anchor. Depending on the cutting tool used, this would leave a relatively small portion of the wellhead protruding from the seabed.</p>
Decommissioning <i>in situ</i>	<p>Feasible</p> <p>The decommissioning <i>in situ</i> alternative will leave the wellhead as it is. No further monitoring or interventions would be undertaken. No vessel activities will be required as part of the decommissioning <i>in situ</i> alternative for the RTM anchors.</p>
Additional structures	<p>Not feasible</p> <p>Augmentation relies on substantial habitat being provided by the existing equipment. The Eskdale-1 wellhead is not near other equipment and extends above the seabed approximately 2-3 m. Hence, there is relatively little to augment. Augmentation typically benefits other users (e.g., commercial and recreational fishers), which would have difficulty accessing the augmentation structures due to the offshore location and water depth.</p>

3.2.4.2 Decommissioning Options Assessment

A summary of the decommissioning options assessment for the Eskdale-1 wellhead is provided in **Table 3-14**. The assessment is provided in full in **Table 3-15**. The assessment indicates that decommissioning *in situ* results in equal or better environmental outcomes than removal of the wellhead. It is therefore proposed that the wellhead is decommissioned *in situ*.

Table 3-14: Summary of evaluation of decommissioning alternatives for the Eskdale-1 wellhead

Criteria	Sub-criteria	Removal		Partial Removal		Decommissioning In Situ	
		Short-term	Long-term	Short-term	Long-term	Short-term	Long-term
Environment	Benthic Habitats	Neutral	Neutral	Neutral	Neutral	More Preferred	Neutral
	Fauna	Neutral	Neutral	Neutral	Neutral	More Preferred	Neutral
	GHG Emissions (excluding waste management)	Neutral	Neutral	Neutral	Neutral	More Preferred	Neutral
	Materials Management	Neutral	Neutral	Neutral	Neutral	Less Preferred	Less Preferred
	Sediment Quality	Neutral	Neutral	Neutral	Less Preferred	Neutral	Less Preferred
	Water Quality	Neutral	Neutral	More Preferred	Neutral	More Preferred	Neutral
Social	Other Users	Neutral	Neutral	More Preferred	Less Preferred	More Preferred	Less Preferred

Table 3-15: Evaluation of decommissioning alternatives for the Eskdale-1 wellhead

Criteria	Sub-criteria	Short- and Long-term Considerations	Base Case Justification	Base Case Score	Partial Removal Justification	Partial Removal Score	Decommissioning <i>In Situ</i> Justification	Decommissioning <i>In Situ</i> Score
Environment	Benthic Habitats	Short-term	Removal of the wellhead will result in the loss of the benthic habitat provided by the wellhead and localised disturbance of the habitat around the wellhead due to sediment relocation. Some sediments will slump into the well bore following removal of the wellhead. The benthic habitats around the wellhead are comprised of unconsolidated silty sediments characterised by infauna and sparse epifauna (Section 5.3.2). This habitat is very widely represented in the region and does not hold significant conservation value. Removal is the base case; hence it is neither preferred nor not preferred.	Neutral	Partial removal of the wellhead will result in the loss of the benthic habitat provided by the wellhead and localised disturbance of the habitat around the wellhead. The benthic habitats around the wellhead are comprised of unconsolidated silty sediments characterised by infauna and sparse epifauna (Section 5.3.2). This habitat is very widely represented in the region and does not hold significant conservation value.	Neutral	No disturbance to benthic habitats. Existing habitat retained. The preservation of benthic habitat results in this alternative being preferred relative to the base case.	More Preferred
		Long-term	Benthic habitats will recover over time following removal of the wellhead, which will be consistent with the natural state prior to the Stybarrow development and the surrounding benthic habitat. Removal eliminates the release of degradation products. Removal is the base case; hence it is neither preferred nor not preferred.	Neutral	Benthic habitats will recover over time following partial removal of the wellhead, which will be consistent with the natural state prior to the Stybarrow development and the surrounding benthic habitat. The remaining section of the wellhead above the mudline will provide a small area of hard substrate. Partial removal substantially reduces the release of degradation products available to biota.	Neutral	The decommissioning <i>in situ</i> alternative will preserve the benthic habitats and associated species on and around the wellhead. The wellhead will degrade over a prolonged period (hundreds to thousands of years) due to the low levels of oxygen in sediments and the protective effect of layers of corrosion. Most of the degradation products will be buried and not readily affect benthic habitats. Cardno (2019) observed increased diversity and abundance of fauna associated with exposed equipment compared to buried equipment and areas without equipment. Given the relatively small area of exposed substrate provided by the wellhead, the increase in habitat diversity of decommissioning <i>in situ</i> will be relatively small. Refer to Sections 8.1, 8.2 and 8.3 for more information on the impacts of decommissioning <i>in situ</i> of the wellhead on benthic habitats.	Neutral
	Fauna	Short-term	The infauna and sparse epifauna (described in Section 5.3.2) associated with the unconsolidated sediment habitat around the wellhead will be disturbed during removal. Mobile fauna that can move away from the disturbance (e.g., fishes) will be displaced rather than lost. Sessile fauna attached to the wellhead will be lost. The fauna impacted are widely	Neutral	The infauna with sparse epifauna (described in Section 5.3.2) associated with the unconsolidated sediment habitat around the wellhead will be disturbed during partial removal. Mobile fauna that can move away from the disturbance (e.g., fishes) will be displaced rather than lost. Sessile fauna attached to the wellhead will be lost. The fauna impacted are widely represented in the region and not of significant conservation value.	Neutral	As there would be no activities required, there would be disturbance to, or loss of fauna associated with the decommissioning <i>in situ</i> in the short-term. Hence this option is preferred compared to removal.	More Preferred

Criteria	Sub-criteria	Short- and Long-term Considerations	Base Case Justification	Base Case Score	Partial Removal Justification	Partial Removal Score	Decommissioning In Situ Justification	Decommissioning In Situ Score
			<p>represented in the region and not of significant conservation value.</p> <p>Vessel and helicopters will generate noise in the air and underwater during decommissioning activities. The main source of noise would be from a DP vessel relating to use of DP thrusters. Listed threatened and migratory species that could be potentially impacts by noise and vibration may be present within the water column above the suction piles, primarily cetaceans, sharks and turtles. The suction piles are located in a pygmy blue whale migration biologically important area (BIA) and wedge-tailed shearwater breeding BIA.</p> <p>Given the noise levels associated with routine operations of the vessel, the potential impacts on marine fauna are unlikely to cause hearing impairment in marine mammals, reptiles or fishes, such as permanent and temporary threshold shifts (Popper et al., 2014; Southall et al., 2021, 2019). However, there is the potential for behavioural disturbance and masking to occur. Behavioural impacts will depend on the audible frequency range of each potential receptor in relation to the frequency of the noise, as well as the intensity of the noise. Removal of the wellhead would be completed in 10 days, so behavioural impacts would be restricted to during this time. It is considered noise generated by the vessel and helicopter activities may result in minor, localised, temporary impacts to marine fauna.</p>		<p>Vessel and helicopters will generate noise in the air and underwater during decommissioning activities. The main source of noise would be from a DP vessel relating to use of DP thrusters. Listed threatened and migratory species that could be potentially impacts by noise and vibration may be present within the water column above the suction piles, primarily cetaceans, sharks and turtles. The suction piles are located in a pygmy blue whale migration biologically important area (BIA) and wedge-tailed shearwater breeding BIA.</p> <p>Given the noise levels associated with routine operations of the vessel, the potential impacts on marine fauna are unlikely to cause hearing impairment in marine mammals, reptiles or fishes, such as permanent and temporary threshold shifts (Popper et al., 2014; Southall et al., 2021, 2019). However, there is the potential for behavioural disturbance and masking to occur. Behavioural impacts will depend on the audible frequency range of each potential receptor in relation to the frequency of the noise, as well as the intensity of the noise. Removal of the wellhead would be completed in 10 days, so behavioural impacts would be restricted to during this time. It is considered noise generated by the vessel and helicopter activities may result in minor, localised, temporary impacts to marine fauna.</p>			
		Long-term	<p>Fauna communities impacted by the removal of the suction piles will recover following removal through natural recruitment and movement of animals. The resulting fauna community would resemble surrounding natural areas after a sufficient period of time. Hence, the impacts to fauna from removal would only affect a relatively small portion of the community and ecosystem services would not be affected.</p> <p>Observations of benthic fauna by Cardno (2019) documented relatively abundant and diverse fauna assemblages on exposed equipment, such as the tops of the suction piles, compared to buried equipment and unconsolidated sediment habitat in the Stybarrow field. Removal of the wellhead would result in a long-term</p>	Neutral	<p>The removal of the wellhead by the partial removal alternative eliminates most of the hard substrate that would provide relatively complex benthic habitats for marine fauna in the future. seabed disturbance caused during the partial removal of the wellhead will be colonised by organisms and is expected to become indistinguishable from the surrounding habitat over time.</p> <p>The remaining section of the wellhead will degrade over time. The portion of the wellhead that may interact with fauna is relatively small, comprising the small extent above the mudline and approximately 30 cm below the mudline. Given the wellhead is made from steel and largely buried, impacts of degradation on fauna will be negligible. Iron and carbon, which are typically 97% of carbon steel by mass pose little risk to the environment. Iron (II) and (III) oxides (i.e., rust)</p>	Neutral	<p>The wellhead will degrade over time. Given the equipment is made from steel and buried, impacts of degradation on fauna will be negligible. Iron and carbon, which are typically 97% of carbon steel by mass pose little risk to the environment. Iron (II) and (III) oxides (i.e., rust) are listed by the OSPAR Commission as posing little or no risk to the environment (PLONOR) and an extensive review by Johnson et al. (2007) found no evidence of toxic effects of iron in marine sediments. Alloying metals may be present in low percentages which may include toxicants identified by the <i>Australian and New Zealand Guidelines for Fresh and Marine Water Quality</i> (Commonwealth of Australia and New</p>	Neutral

Criteria	Sub-criteria	Short- and Long-term Considerations	Base Case Justification	Base Case Score	Partial Removal Justification	Partial Removal Score	Decommissioning In Situ Justification	Decommissioning In Situ Score
			decrease in the biodiversity and abundance of fauna in the Stybarrow field.		<p>are listed by the OSPAR Commission as posing little or no risk to the environment (PLONOR) and an extensive review by Johnson et al. (2007) found no evidence of toxic effects of iron in marine sediments. Alloying metals may be present in low percentages which may include toxicants identified by the <i>Australian and New Zealand Guidelines for Fresh and Marine Water Quality</i> (Commonwealth of Australia and New Zealand Government, 2018). Concentrations of metals above the concentrations that may result in toxic effects are expected to be restricted to within approximately 21 m radius from the wellhead (refer to Section 8.2).</p> <p>Infauna have the greatest likelihood of interacting with degradation products given their associated with sediments. Most infauna are restricted to the upper 30 cm of sediment (Kristensen et al., 2012).</p> <p>The residual part of the wellhead will provide a small amount of hard substrate habitat, which is required for some sessile benthic invertebrates. It will also provide a small amount of habitat for fishes, as per the observations made by Cardno (2019).</p>		<p>Zealand Government, 2018). Concentrations of metals above the concentrations that may result in toxic effects are expected to be restricted to within approximately 21 m radius from the wellhead (refer to Section 8.2).</p> <p>Infauna have the greatest likelihood of interacting with degradation products given they are associated with sediments. Most infauna are restricted to the upper 30 cm of sediment (Kristensen et al., 2012).</p> <p>The wellhead will provide a of hard substrate habitat, which is required for some sessile benthic invertebrates. It will also provide a small amount of habitat for fishes, as per the observations made by Cardno (2019).</p> <p>Decommissioning <i>in situ</i> may increase biodiversity and abundance of fauna (from physical presence) which is considered a benefit, while also introducing potential toxicants, which is a detriment. Hence this alternative is neutral compared to removal.</p> <p>Refer to Sections 8.1, 8.2 and 8.3 for more information on the impacts of decommissioning <i>in situ</i> of the wellhead on fauna.</p>	
	GHG Emissions (excluding waste management)	Short-term	<p>The removal base case would be implemented as part of an equipment removal campaign, with GHG emissions limited to the additional sea time required to complete the removal activities. Atmospheric emissions from vessels undertaking the removal base case will result in a localised decrease in air quality due to exhaust emissions from internal combustion engines.</p> <p>Fuel combustion onboard vessels will generate carbon dioxide emissions, which is a GHG.</p> <p>Removal is the base case; hence it is neither preferred nor not preferred.</p>	Neutral	<p>The partial removal alternative would be implemented as part of an equipment removal campaign, with GHG emissions limited to the additional sea time required to complete the removal activities. Atmospheric emissions from vessels undertaking the removal base case will result in a localised decrease in air quality due to exhaust emissions from internal combustion engines.</p> <p>Fuel combustion onboard vessels will generate carbon dioxide emissions, which is a GHG.</p>	Neutral	<p>The decommissioning <i>in situ</i> alternative does not generate GHG or atmospheric emissions during the removal campaign. Hence this alternative is preferred compared to removal.</p>	More Preferred
		Long-term	<p>No GHG emissions (excluding materials management) following removal of the equipment.</p> <p>Removal is the base case; hence it is neither preferred nor not preferred.</p>	Neutral	<p>No GHG emissions (excluding materials management) following removal of the equipment.</p>	Neutral	<p>The decommissioning <i>in situ</i> alternative does not generate or offset GHG or atmospheric emissions following the removal campaign. Hence this alternative is neutral compared to removal.</p>	Neutral

Criteria	Sub-criteria	Short- and Long-term Considerations	Base Case Justification	Base Case Score	Partial Removal Justification	Partial Removal Score	Decommissioning In Situ Justification	Decommissioning In Situ Score
	Materials Management	Short-term	The removal base case provides the opportunity to recycle the wellhead. This sits above disposal in the waste management hierarchy. Removal is the base case; hence it is scored neutral.	Neutral	The partial removal alternative provides the opportunity to recycle a substantial portion of the wellhead.	Neutral	Decommissioning <i>in situ</i> is no opportunity to reuse, repurpose or recycle the wellhead. The alternative scores lower in the waste management hierarchy than removal, hence it is less preferred.	Less Preferred
		Long-term	The removal base case provides the opportunity to re-use, repurpose or recycle the wellhead. These all sit above disposal in the waste management hierarchy. Removal is the base case; hence it is scored neutral.	Neutral	The partial removal alternative provides the opportunity to recycle a substantial portion of the wellhead.	Neutral	There is no opportunity to reuse, repurpose or recycle the wellhead. The alternative scores lower in the waste management hierarchy than removal, hence it is less preferred than removal.	Less Preferred
	Sediment Quality	Short-term	Some sediment resuspension would occur during removal of the wellhead. An internal cut would result in swarf falling into the well and hence not impact upon sediments. Removal is the base case; hence it is scored neutral.	Neutral	Some sediment resuspension would occur during removal of the wellhead. Swarf from the external cut would fall into the well and the sediments surrounding the wellhead. Water jetting may be required to provide access to the wellhead for the external cutting tool.	Neutral	No impacts to sediment quality in the short-term. Hence this alternative is more preferred than removal.	Neutral
		Long-term	No impacts to sediment quality in the long term. Removal is the base case; hence it is scored neutral.	Neutral	<p>The degradation of the residual wellhead will impact sediment quality.</p> <p>The wellhead is made of steel and the residual section following partial removal will be mostly buried within the seabed. Corrosion products will be concentrated in the sediments around the wellhead, with corrosion products in the upper 30 cm of the sediment potentially interacting with fauna, where most infauna occur (Kristensen et al., 2012). Corrosion products inside the wellhead will fall into the well, where they will not interact with fauna. Given much of the portion of the wellhead above the mudline would be removed, the portion of degradation products falling into the well would be greater than those deposited in the surrounding sediments.</p> <p>Iron and carbon, which are typically 97% of carbon steel by mass pose little risk to the environment. Iron (II) and (III) oxides (i.e., rust) are listed by the OSPAR Commission as posing little or no risk to the environment (PLONOR) and an extensive review by Johnson et al. (2007) found no evidence of toxic effects of iron in marine sediments.</p> <p>Alloying metals may be present in low percentages which may include toxicants identified by the <i>Australian and New Zealand Guidelines for Fresh and Marine Water Quality</i> (Commonwealth of Australia and New Zealand Government, 2018). Concentrations of metals above the concentrations that may result in toxic effects are expected to be restricted to within approximately 21 m radius from the wellhead (refer to Section 8.2).</p>	Less Preferred	<p>The degradation of the residual wellhead will impact sediment quality.</p> <p>The wellhead is made of steel and as it degrades, corrosion products will be concentrated in the sediments around the wellhead, with corrosion products in the upper 30 cm of the sediment potentially interacting with fauna, where most infauna occur (Kristensen et al., 2012). Corrosion products inside the wellhead will fall into the well, where they will not interact with fauna.</p> <p>Iron and carbon, which are typically 97% of carbon steel by mass pose little risk to the environment. Iron (II) and (III) oxides (i.e., rust) are listed by the OSPAR Commission as posing little or no risk to the environment (PLONOR) and an extensive review by Johnson et al. (2007) found no evidence of toxic effects of iron in marine sediments.</p> <p>Alloying metals may be present in low percentages which may include toxicants identified by the <i>Australian and New Zealand Guidelines for Fresh and Marine Water Quality</i> (Commonwealth of Australia and New Zealand Government, 2018). Concentrations of metals above the concentrations that may result in toxic effects are expected to be restricted to within approximately 21 m radius from the wellhead (refer to Section 8.2).</p>	Less Preferred

Criteria	Sub-criteria	Short- and Long-term Considerations	Base Case Justification	Base Case Score	Partial Removal Justification	Partial Removal Score	Decommissioning In Situ Justification	Decommissioning In Situ Score
	Water Quality	Short-term	<p>Removal of the wellhead will result in resuspension of sediments as the wellhead are pulled from the seabed and recovered to a vessel. This will result in a short-term increase in suspended sediments in the water column, which will return to normal levels within days following completion of the activity.</p> <p>Vessel operations for the removal base case will result in utility discharges. Impacts to water quality from vessel utility discharges may include:</p> <ul style="list-style-type: none"> • Increased nutrients • Increased biochemical oxygen demand. • Increased turbidity • Reduced visual amenity. • Increased potential contaminants such as hydrocarbons and chemicals. <p>The open water environment receiving utility discharges is expected to result in rapid mixing of utility discharges from vessels. As a result, the potential impacts to water quality will be highly localised and restricted to the immediate area (i.e., 10's to 100's of metres) around the discharge point.</p> <p>Removal is the base case; hence it is neither preferred nor not preferred.</p>	Neutral	No impacts to water quality in the short-term. Hence this alternative is more preferred than removal.	More Preferred	No impacts to water quality in the short-term. Hence this alternative is more preferred than removal.	More Preferred
		Long-term	<p>No impacts to water quality following completion of the removal activities.</p> <p>Removal is the base case; hence it is neither preferred nor not preferred.</p>	Neutral	No impacts to water quality in the long-term. The degradation products are insoluble in seawater and largely buried within the sediments. Hence this alternative is equally preferred compared to removal.	Neutral	No impacts to water quality in the long-term. The degradation products are insoluble in seawater and largely buried within the sediments. Hence this alternative is equally preferred compared to removal.	Neutral
Social	Other Users	Short-term	<p>The removal activities may temporarily displace other users from WA-32-L, although there is very little activity by other users in WA-32-L (Section 5.6).</p> <p>Removal is the base case; hence it is scored neutral.</p>	Neutral	No potential for displacement of other users as no vessel activities required. Hence this alternative is preferred to removal.	More Preferred	No potential for displacement of other users as no vessel activities required. Hence this alternative is preferred to removal.	More Preferred
		Long-term	<p>No impacts to other users following removal.</p> <p>Removal is the base case; hence it is scored neutral.</p>	Neutral	The exposed residual section of the wellhead may pose a risk to trawled fishing gear. However, there is no demersal or benthic trawl fishing in WA-32-L historically. The risk to trawl fishing gear is mitigated through consultation and inclusion of the wellhead on nautical charts. The presence of the wellhead will not prevent other uses (e.g., renewable energy generation or other petroleum activities) in future.	Less Preferred	The exposed section of the wellhead may pose a risk to trawled fishing gear. However, there is no demersal or benthic trawl fishing in WA-32-L historically. The risk to trawl fishing gear is mitigated through consultation and inclusion of the wellhead on nautical charts. The presence of the wellhead will not prevent other uses	Less Preferred

Criteria	Sub-criteria	Short- and Long-term Considerations	Base Case Justification	Base Case Score	Partial Removal Justification	Partial Removal Score	Decommissioning <i>In Situ</i> Justification	Decommissioning <i>In Situ</i> Score
							(e.g., renewable energy generation or other petroleum activities) in future.	

Table 3-16: Alignment with Principles of ESD for decommissioning of the Eskdale-1 wellhead

Principles of ESD	Removal	Partial removal and Decommissioning <i>In situ</i>
<p>Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations</p>	<p>The decision-making process by which the feasible alternatives decommissioning options for the Eskdale-1 wellhead were assessed considers environmental (e.g., water and sediment quality), social (e.g., the rights of other users of the marine environment) and equitable (e.g., the rights of other users of the marine environment) criteria. Short-term (i.e., during decommissioning activities) and long-term (i.e., following the decommissioning activities) timeframes have been explicitly considered in the options assessment. Woodside has considered the economics of the feasible decommissioning options; however, this is not presented in the comparative assessment as the <i>Guideline: Offshore Petroleum Decommissioning</i> (Department of Industry, Science, Energy and Resources, 2022) only considers the relative environmental outcomes of decommissioning options. Hence, the assessment of the feasible decommissioning alternative options including both removal and decommissioning <i>in situ</i> is consistent with this principle of ESD.</p>	
<p>If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation</p>	<p>As described in the options assessment presented above, there are short term impacts and risks associated with the removal option including those arising from vessel use and the removal of the Eskdale-1 wellhead from the seabed (seabed disturbance, disturbance to benthic habitats and infauna). Removal of the wellhead eliminates the long-term impacts associated with leaving the wellhead <i>in situ</i>, such as long-term corrosion and release of materials into the marine environment. There is no threat of serious or irreversible damage associated with removal of the wellhead. Hence, the assessment of the removal option is consistent with this principle of ESD.</p>	<p>The partial removal and decommissioning <i>in situ</i> options will result in the degradation of the wellhead (or part of the wellhead) over hundreds to thousands of years. The materials from which the wellhead is made are well known. Degradation causes (e.g., galvanic and microbial induced corrosion) are well understood.</p> <p>Given the nature and scale of potential environmental impacts from degradation of Eskdale-1 wellhead, there is no threat of serious or irreversible environmental damage from the decommissioning <i>in situ</i> option. Hence, the assessment of the decommissioning <i>in situ</i> option is consistent with this principle of ESD.</p>
<p>The principle of inter-generational equity – that the present generation should ensure that the health, diversity and productivity of the environment is</p>	<p>Removal of the wellhead will cause disturbance of the seabed, but this will recover over time through natural sedimentary processes. There are no long-term impacts to the environment that would impact upon the health, diversity and productivity of the environment. Hence, the</p>	<p>The partial removal and decommissioning <i>in situ</i> options will not reduce the health, diversity and productivity of the environment such that future generations would not benefit from the environment. Both options affect a small area of the seabed, and the location of the wellhead is known. Future uses of the seabed (e.g., installation of offshore structures) can avoid the wellhead, and displacement of future uses would be on the scale of tens to hundreds of metres only. Hence, the assessments of the partial removal and decommissioning <i>in situ</i> options are consistent with this principle of ESD.</p>

Principles of ESD	Removal	Partial removal and Decommissioning <i>In situ</i>
maintained or enhanced for the benefit of future generations	assessment of the removal option is consistent with this principle of ESD.	
The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making	The environmental criteria either relate to biological diversity and ecological integrity (e.g., fauna, benthic habitat) or are strongly connected to biological diversity and ecological integrity (e.g., water and sediment quality). Hence, the assessment of the feasible decommissioning options is consistent with this principle of ESD.	
Improved valuation, pricing and incentive mechanisms should be promoted	Woodside’s waste management hierarchy incentivises the reuse, repurposing and recycling of the suction piles. These arrangements are reflected in Woodside’s contracting strategies. Removal of the wellhead provides the greater potential for reuse, repurposing and recycling compared to the partial removal and decommissioning <i>in situ</i> options. The partial removal option would recover a substantial portion of the wellhead and hence its score in the materials management criterion was similar to removal. The decommissioning <i>in situ</i> option scored relatively poorly in the materials management criterion when compared to the removal option. Hence, the assessment of the feasible decommissioning options is consistent with this principle of ESD.	

Table 3-17: Assessment of decommissioning options against relevant legislation and guidelines

Relevant Requirements	Removal	Partial Removal and Decommissioning <i>In Situ</i>
Offshore Petroleum and Greenhouse Gas Storage (OPGGS) Act 2006		
<ul style="list-style-type: none"> Section 572 requires titleholders to remove structures, equipment and property that are no longer being used in connection with operations authorised by the title (subject to any other provisions of the Act, the regulations, a direction by NOPSEMA and any other law). Section 270 requires titleholders to remove all infrastructure before the title can be surrendered or to make alternative arrangements that are satisfactory to NOPSEMA in relation to that infrastructure. 	The removal of the Eskdale-1 wellhead meets requirements under the OPGGS Act for removal from the title area.	The case for partial removal or decommissioning <i>in situ</i> needs to be to the satisfaction of NOPSEMA and approved through acceptance of this EP.
Environment Regulations		
<p>Under the OPGGS Act 2006, the Environment Regulations ensure that any petroleum activity or greenhouse gas activity carried out in an offshore area is:</p> <ul style="list-style-type: none"> Carried out in a manner consistent with the principles of ecologically sustainable development set out in section 3A of the EPBC Act. 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). Carried out in a manner by which the environmental impacts and risks of the activity will be of an acceptable level. 	Removal is assumed to meet the requirements of the Environment Regulations.	<p>Partially removing or abandoning <i>in situ</i> the Eskdale-1 wellhead meets requirements under the Environment Regulations for petroleum and greenhouse gas activities carried out in an offshore area as follows:</p> <ul style="list-style-type: none"> This EP contains an assessment that determines consistency with the principles defined in Section 3A of the EPBC Act for partial removal of infrastructure. This EP contains an ALARP assessment for the environmental impacts and risks. This EP contains an evaluation that environmental impacts and risks relating to decommissioning <i>in situ</i> of infrastructure will be managed to an acceptable level.

Relevant Requirements	Removal	Partial Removal and Decommissioning <i>In Situ</i>
Guideline: Offshore Petroleum Decommissioning (Department of Industry, Science, Energy and Resources, 2022)		
<p>The <i>Guideline: Offshore Petroleum Decommissioning</i> (Department of Industry, Science, Energy and Resources, 2022) states that removal of infrastructure is the default decommissioning requirement under the OPGGS Act. The guideline also states that alternative decommissioning options other than removal may be considered; however, the titleholder must demonstrate in permissioning documents that the alternative approach delivers equal or better environmental outcomes compared to complete removal and other applicable laws.</p>	<p>Removal meets base case requirements for decommissioning.</p>	<p>The partial removal and decommissioning <i>in situ</i> option are shown to yield equal or better environmental outcomes than removal. Decommissioning <i>in situ</i> is the petroleum activity proposed in this EP. This EP identifies a range of relevant requirements (e.g., Section 2). Demonstrations that the petroleum activity will comply with relevant requirements are made throughout the EP (e.g., the acceptability demonstrations in the assessment of environmental impacts).</p>
Policy: Section 572 Maintenance and Removal of Property (NOPSEMA, 2022)		
<p>NOPSEMA's <i>Section 572 Maintenance and Removal of Property</i> (2022) policy proposes that a deviation from the base case of removal can be sought. Arrangements other than removal of property will only be accepted where they are appropriate having regard to applicable legislation, relevant Australian Government guidelines and policy.</p> <p>Specifically, the titleholder must demonstrate that the alternative decommissioning approach meets all applicable requirements under the OPGGS Act and regulations, any other legislative requirement, and relevant international obligations.</p>	<p>Removal meets the requirement in the policy for removal from the title area.</p>	<p>This EP identifies a range of relevant requirements (e.g., Section 2), including relevant Australian Government guidelines and policy. Demonstrations that the petroleum activity (i.e., decommissioning <i>in situ</i>) will comply with relevant requirements are made throughout the EP (e.g., the acceptability demonstrations in the assessment of environmental impacts).</p>
Environment Protection and Biodiversity Conservation Act 1999		
<p>The EPBC Act requires that the petroleum activity consider:</p>	<p>Removal of infrastructure meets requirements under the EPBC Act, as:</p> <ul style="list-style-type: none"> it will not likely result in unacceptable impacts to 	<p>Partial removal and decommissioning <i>in situ</i> of the Eskdale-1 wellhead meets requirements under the EPBC Act, as:</p>

Relevant Requirements	Removal	Partial Removal and Decommissioning <i>In Situ</i>
<ul style="list-style-type: none"> Matters of national environmental significance, such as threatened and migratory species and the Commonwealth marine environment. The principles of ESD. 	<p>MNES, such as threatened or migratory fauna or the Commonwealth marine environment.</p> <ul style="list-style-type: none"> it is not inconsistent with plans made under the Act (e.g., recovery and threat abatement plans) it is consistent with the principles of ESD. 	<ul style="list-style-type: none"> they will not likely result in unacceptable impacts to MNES, such as threatened or migratory fauna or the Commonwealth marine environment. they are not inconsistent with plans made under the Act (e.g., recovery and threat abatement plans) they are consistent with the principles of ESD. <p>Demonstrations of the points above are provided throughout the EP (e.g., the acceptability demonstrations in the assessment of environmental impacts)</p>
<i>Environment Protection (Sea Dumping) Act 1981</i>		
<p>Section 10A of the <i>Environment Protection (Sea Dumping) Act 1981</i> requires a permit to be obtained for the dumping of controlled material into Australian waters.</p> <p>‘Controlled material’ is defined in the <i>Environment Protection (Sea Dumping) Act 1981</i> as ‘waste or other material (within the meaning of the Protocol [meaning the London Protocol])’.</p> <p>The London Protocol states that sea dumping does not include “the abandonment in the sea of matter (e.g., cables, pipelines and marine research devices) placed for a purpose other than the mere disposal thereof”.</p>	<p>Removal of infrastructure does not trigger requirements under the <i>Environment Protection (Sea Dumping) Act 1981</i>, considering infrastructure will be removed from the marine environment.</p>	<p>Prior to permanently leaving structures considered in this EP <i>in situ</i>, Woodside anticipates obtaining a Sea Dumping Permit in accordance with the requirements of the <i>Environment Protection (Sea Dumping) Act 1981</i>.</p>
International Maritime Organisation (IMO) Resolution A.672(16) - Guidelines and standards for the Removal of Offshore Installations and Structures on the Continental Shelf and the Exclusive Economic Zone adopted 1989¹		
<p>Relevant paragraphs of IMO Resolution A.672 (16) contain the following requirements:</p> <ul style="list-style-type: none"> Infrastructure within specified water depths (above 75 and 100 m) should be completely removed (paragraphs 3.1 and 3.2). 	<p>Meets requirements for removal of abandoned or disused installations or structures.</p>	<p>Leaving the infrastructure meets all the relevant requirements of IMO Resolution A.672 (16) as follows:</p> <ul style="list-style-type: none"> The depth of water where the infrastructure is located is > 800 m and therefore deeper than the depths paragraphs 3.1 and 3.2 recommend removal.

Relevant Requirements	Removal	Partial Removal and Decommissioning <i>In Situ</i>
<ul style="list-style-type: none"> Infrastructure left <i>in situ</i> should not cause unjustifiable interference with other uses of the sea (paragraph 3.4.2). Structures left <i>in situ</i> should be marked on navigational charts (paragraph 3.8). Structures left <i>in situ</i> should remain on location and not move (paragraph 3.9). Structures left <i>in situ</i> should be monitored, as necessary, for compliance against these guidelines (paragraph 3.10). Responsibility for maintenance and liability for future damages from structures left <i>in situ</i> should be clearly established (paragraph 3.11). 		<ul style="list-style-type: none"> Physical presence of the infrastructure will not result in a potential impact greater than a minor disturbance to other users as assessed in Section 8.1. Woodside commits to notifying Australian Hydrographic Office (AHO) to ensure the infrastructure remain marked on navigation charts; refer to Section 8.1. The infrastructure is located in a fixed position buried below the seabed and will therefore not move from this location. Periodic monitoring has been determined not to be required to ensure ongoing compliance against IMO Resolution A.672 (16). This is on the basis that degradation of the subsea infrastructure will occur over a significantly long time period by which the rate of change is predicted to be slow and unlikely to be easily detected over short to medium timeframes making ongoing monitoring impractical. No ongoing maintenance is required beyond decommissioning of the infrastructure. Demonstration against Section 270 requirements is summarised in Stybarrow Decommissioning and Field Management EP.

¹ IMO Resolution A.672(16) sets out the matters to be considered by State parties to UNCLOS when making decisions dealing with abandoned or disused installations on the Continental Shelf. Australia’s decommissioning policies consider the requirements of IMO Resolution A.672(16) (Department of Industry, Science, Energy and Resources, 2022).

4 Description of the Activity

4.1 Overview

This section has been prepared in accordance with Regulation 21(1) of the Environment Regulations, and describes the petroleum activity to be performed under this EP.

When in production, the Stybarrow field comprised the MV16 Stybarrow Venture, a floating production, storage, and offloading (FPSO) vessel, with production, gas injection and water injection wells at four drill centres routed to the disconnectable turret mooring (DTM) via flexible flowlines. Oil products were stabilised and stored for offloading via tanker.

The Stybarrow field ceased production in June 2015. Since then, the following cessation activities have been completed:

- All flowlines and gas lift lines were flushed and filled with treated seawater and production flowlines disconnected.
- All production, gas injection and water injection wells were shut in and capped to await plugging and abandonment.
- The Stybarrow Venture FPSO was disconnected from the DTM and demobilised from the field.

The DTM unexpectedly sunk to the seabed at some point between May 2016 and October 2016, where it lies in approximately 825 m water depth with risers still attached. Following the DTM sinking, the riser buoyancy modules were removed to eliminate buoyant risk.

Within the scope of this EP, Woodside proposes to decommission *in situ* equipment buried in the seabed, namely:

- nine anchors for the DTM
- suction piles:
 - nine suction piles used as bases for holdback clamps on the risers.
 - one suction pile used as the foundation for the water injection manifold,
- one exploration wellhead, Eskdale-1, drilled in 2003. The previous two attempts to remove the wellhead were unsuccessful.

A detailed inventory of subsea infrastructure to be decommissioned *in situ* under the scope of this EP is provided in **Table 4-3**.

Other activities relevant to the decommissioning of the Stybarrow field are covered in other EPs:

- Management and removal of most of the subsea equipment in the Stybarrow field, addressed in Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003)
- Plug and abandonment of shut-in wells in the Stybarrow field and removal of the H4 flowline, addressed in the Stybarrow Plug and Abandonment EP (BHPB-00SC-N000-0005)

An as-left survey to confirm the position and condition of the equipment to be decommissioned *in situ* will be done as part of the equipment removal activities addressed in the Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003).

4.2 Location of the Activity

The Stybarrow field is located within Production Licence WA-32-L, located in Commonwealth waters, around 56 km north-west of Exmouth, Western Australia and in water depths of about 810 m – 850 m (**Figure 4-2**).

The relative distances of key islands/mainland from the petroleum activity are provided in **Table 4-1**.

Table 4-1: Location of infrastructure proposed for in situ decommissioning in relation to key onshore features.

Key Island or Mainland Feature	Distance and Direction from EMBA
Ningaloo World Heritage Area	25 km south
Muiron Islands	53 km east-south-east
Exmouth	57 km south-south-east
Serrurier Island	85 km east
Thevenard Island	116 km east
Onslow	131 km east
Barrow Island	162 km east-north-east

4.3 Operational Area

As no planned operations are proposed, an Operational Area has not been defined. However, an area around the subsea infrastructure proposed to be decommissioned *in situ*, where environmental impacts have the potential to occur has been defined. This area is referred to throughout the EP as the Environment That May Be Affected (EMBA) as described in Section 4.7.

4.4 Timing of the Activity

The equipment that will be decommissioned *in situ* is currently installed in WA-32-L. Woodside proposes the petroleum activity in this EP is scheduled to commence in March 2025 once the equipment removal activities described in the Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003) are completed.

The Stybarrow Decommissioning and Field Management EP outlines that subsea infrastructure removal activities are expected to be conducted over a cumulative period of around six months, with activities required to be completed no later than 31 March 2025 (as required by General Direction 833). Following subsea infrastructure removal activities, Woodside will undertake required surveys or environmental sampling within twelve months.

The petroleum activities in this EP will have been completed once the environmental performance standards within have been met and reported upon to NOPSEMA (**Section 10.4**).

Further details on the scheduling of the Stybarrow field decommissioning is provided in **Section 2.2.1.1**.

4.5 Decommissioning Planning

The activities being undertaken to meet the requirements of Section 572(3) of the OPGGS Act and General Direction 833 are covered by three separate Environment Plans. The scope of each is detailed in **Table 4-2** with an indicative timetable presented in **Figure 4-1**.

Woodside intends to apply to surrender WA-32-L at the conclusion of the decommissioning activities. Environmental monitoring to support the application to surrender WA-32-L will be undertaken within the scope of the Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003).

Table 4-2: Stybarrow decommissioning EPs, activities, commencement and end details

Environment Plan	Activities	EP Commencement	EP End
Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003)	Removal of equipment and field management activities, including environmental monitoring for all decommissioning activities.	Currently in force EP accepted by NOPSEMA on 8 January 2024.	On NOPSEMA acceptance of end of activity notification.
Stybarrow Well Plug and Abandonment EP (BHPB-00SC-N000-0005)	Details permanent plugging and abandonment of the wells in the Stybarrow field.	Currently in force EP accepted by NOPSEMA on 21 December 2023.	On NOPSEMA acceptance of end of activity notification.
Stybarrow End State Decommissioning EP (BHPB-00SC-N000-0007)	This EP Details a decommissioning <i>in situ</i> deviation case for suction piles, DTM anchors and one wellhead that was unable to be removed at the conclusion of drilling.	From EP acceptance.	On NOPSEMA acceptance of end of activity notification.

4.6 Studies to Inform Decommissioning

4.6.1 Naturally Occurring Radioactive Material

Naturally occurring radioactive material (NORM) is the term used to describe materials containing radionuclides that exist in the natural environment. It is widely distributed in the Earth's crust and is subsequently also present in gas and oil reservoirs. The radionuclides of interest include uranium, thorium and actinium decay series products, with decay products radium (^{226}Ra and ^{228}Ra), lead (^{210}Pb) and possibly polonium (^{210}Po) deposited at concentrations that can lead to ecological harm (Koppel et al., 2022). NORM can precipitate inside subsea equipment in the form of scale, typically where a change in either pressure or temperature occurs (e.g., gas export pipeline inlets).

A preliminary NORM survey of the subsea equipment in 2015 measured radiation at 45 sites on the Stybarrow equipment and found no significant NORM readings; the highest readings were measured at the H4 8-inch production connector.

A more extensive NORM survey was carried out in 2018 (SA Radiation, 2018a), which recorded radiation levels on all subsea production equipment, including Xmas trees and production, gas injection and water injection flowlines and risers. A total of 442 readings were made using a calibrated survey meter, with all readings below the limit of detection for the three instrument geometries used for the survey. This survey demonstrates the absence of substantial build-up of NORM scale within the subsea equipment in the Stybarrow field. This was also confirmed by the testing of recovered sections of flowlines and risers, which found very thin scale within grooves of the inner metal layer of part of the 8-inch production flowline showing concentrations of 141 Bq/g ^{226}Ra and 150 Bq/g ^{228}Ra , with no NORM scale in the riser (SA Radiation, 2018a).

None of the equipment within the scope of this EP was exposed to production fluids and hence does not contain NORM.

4.6.2 Mercury

As part of the radiation assessment by SA Radiation (2018a, 2018b), scale from the H4 flowline was also analysed for concentrations of mercury by SGS (which is accredited by the National Association of Testing Authorities). SGS used a weak acid extraction to sample mercury from the scale to measure the concentration of ethyl-, methyl- and phenyl-mercury, as well as elemental mercury (II) and total mercury. All analytical results were below the laboratory limits of reporting for each analysis.

None of the equipment within the scope of this EP was exposed to production fluids and hence does not contain mercury.

4.6.3 Sediment and Water Quality

Cardno (2019) analysed sediment, water, infauna, epifauna and fish samples from the Stybarrow field collected by DOF Subsea. Sediment and infauna were sampled using an ROV using push cored at six impact sites and 12 reference sites. The results of the survey are discussed in the relevant sections of the Description of the Environment (**Section 5**).

There was evidence of increased concentrations of potential contaminants – lead, barium, boron, arsenic, mercury and hydrocarbons – in sediments at some sites within the Stybarrow field. Aside from very short breaks in containment (e.g., H4 flowline disconnection) which were promptly sealed, production fluids have been contained within subsea equipment. Produced formation water was routinely re-injected rather than discharged to the environment. As such, contamination in the sediments could not credibly be the result of production-phase activities, with the discharge of drilling fluids and muds the most reasonable explanation for the increased concentrations of these parameters.

4.6.4 Engineering Studies

Engineering and inspection work has been undertaken to determine the condition of the equipment inventory in the Stybarrow field. Inspections show that the equipment proposed for decommissioning *in situ* is in good condition and has not moved since installation.

4.7 Environment that may be Affected

The EMBA shown in **Figure 4-2** is defined by the changes to the environment that may occur as a result of the petroleum activities described in this EP. The EMBA is defined as the area encompassing a 500 m radius around the equipment that will be decommissioned *in situ*. The changes to the environment from decommissioning *in situ* of the equipment within the scope of this EP include:

- Provision of hard substrate, resulting in increased abundance of sessile benthic fauna that require hard substrate and associated biota (e.g., fishes). These changes will be restricted to the equipment itself.
- Changes to sediment quality due to the release of degradation products over time and modification of hydrodynamic regimes. These changes will be limited to within 10's of metres of the equipment.
- Potential avoidance of equipment by fishers using trawled gear. The only trawl fishery that operates in the depth range of the Stybarrow field is the West Coast Deep Sea Crustacean Fishery, which has not been active within 500 km of the Stybarrow field in the last ten years.

Woodside has conservatively defined the EMBA as the area encompassing a 500 m radius around, and up to 5 m above, the equipment proposed to be decommissioned *in situ*. **Section 8** describes the spatial extent of the impacts associated with the equipment, all of which are predicted to occur well within the EMBA.

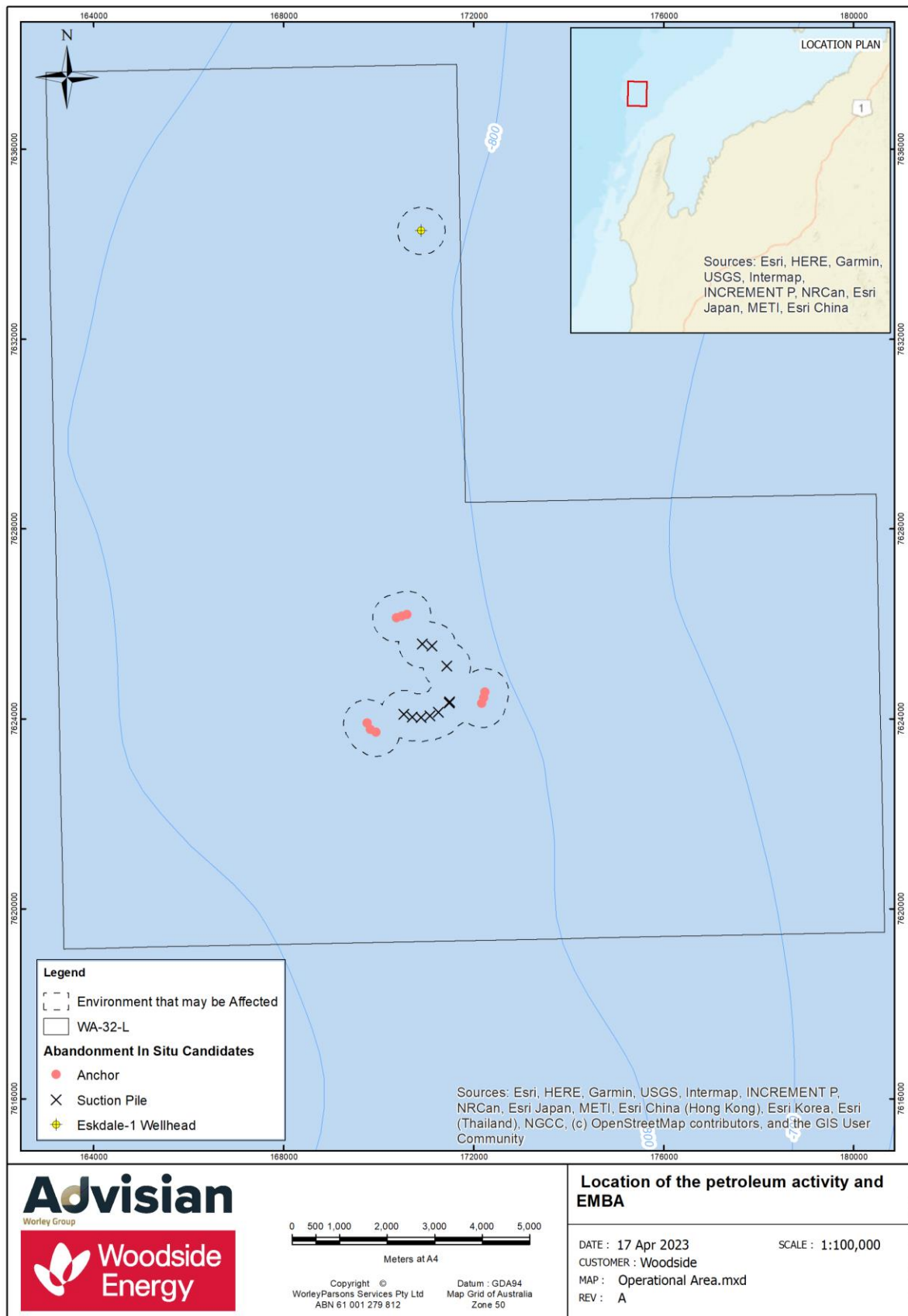


Figure 4-2: Location of the petroleum activity and EMBA

4.8 Overview of Equipment to be Decommissioned *In Situ*

All equipment to be decommissioned *in situ* within the Stybarrow field is presented within **Table 4-3**, along with the status and condition. The locations of the field infrastructure are presented in **Figure 4-2**.

The equipment to be decommissioned *in situ* is composed of steel and some protective epoxy paint coating on parts of the suction piles and some sacrificial anodes. None of the equipment to be decommissioned *in situ* contained production fluids, hence there are no residual contaminants from the operational phase of the Stybarrow field (e.g., hydrocarbons, NORM, heavy metal contaminants originating from the reservoir etc.).

The equipment utilised during the production life of the facility (anchors, piles) is within the intended design life of 15 years.

Table 4-3: Summary of equipment to be decommissioned *in situ* in the Stybarrow field.

Subsea Infrastructure	No	Size	Approximate weight	Materials	Status and Condition
DTM mooring anchors and residual chains	9	Approx. 11 tonnes each. Approx. 6 m long, 6 m wide and 3 m high Up to 20 m ground chain, approx. 2.8 t each.	99 t anchors Up to 25 t chains	100% metal (steel)	Buried in seabed. No parts exposed. Remaining chain cut as close as practicable to the anchors, attached to the anchor to be left <i>in situ</i> .
Riser hold back base anchors (suction piles)	9	4 m diameter, 7.5 m height	1,863 t	>99% metal (steel) Sacrificial anodes Partial epoxy paint coating (450-micron thickness)	Suction piles buried in seabed. Clamps and chains removed.
Water injection manifold piled foundation (suction pile)	1	7.83 m x 6.42 m	44.55 t	>99% metal (steel) Sacrificial anodes Partial epoxy paint coating (450-micron thickness)	Suction pile foundation buried in seabed. Integrity of the structure is supported by robust design and materials of construction, and visual inspection in 2018 confirmed no external corrosion, coating damage or marine growth.
Eskdale-1 wellhead	1	Approx. 2 m x 2 m x 3 m	7.5 t	>99% metal (steel) Small amount (up to 3 kg) of plastic seal and tubing material (nitrile rubber)	Plugged and decommissioned, buried in seabed. Two previous mechanical cutting attempts to remove were unsuccessful. The water depth precludes the use of

Subsea Infrastructure	No	Size	Approximate weight	Materials	Status and Condition
				<p>Epoxy paint comprising solvent and epoxy. Approximately 10.5 kg total of Interseal670HS on hot stab and transponder mount.</p> <p>Paint comprising solvent (50%), yellow pigment (25%), xylene (10%), ethyl benzene (10%). Approximately 17kg total of Tiger Brand Gloss Finish.</p> <p>Paint comprising N-methyl-2-pyrrolidone (60%), 4-methylpentan-2-one (10%), xylene (10%), cadmium sulphide (10%), ethyl benzene (5%). Approximately 7kg total of Xylan 1052</p>	abrasive water jet cutting techniques.

Since Stybarrow ceased production in 2015, the subsea infrastructure has been the subject of surveys to determine the status and condition of equipment and the environment. The inspection history of the subsea equipment over field life is summarised in **Table 4-4**.

Table 4-4: Inspection history of subsea equipment in the Stybarrow field

Date	Inspection / Survey Description
August 2009	ROV general visual inspection (GVI) and cathodic protection (CP) measurements of all subsea equipment
February 2010	ROV GVI of DTM and top 80 m of risers
July 2010	ROV inspection of mooring system
November 2011	ROV hull and mooring inspection
July 2012	ROV inspection and remediation of the Eskdale subsea distribution unit
July 2014	ROV GVI and CP measurements of all subsea equipment
October 2014	ROV GVI of EH-1 riser and bend stiffener
November 2014	ROV inspection of mooring legs and installing clamp on EH-1 riser

Date	Inspection / Survey Description
June 2015	ROV inspection of bend stiffener clamps
August 2015	Flushing and treating of flowlines and umbilicals, disconnection of DTM and departure of the FPSO
November 2015	Disconnection of production flowlines from wells
May 2016	Echo sounder of DTM (still at 40 m water depth)
October 2016	Echo sounder of DTM (not found)
November 2016	Multi-beam of DTM, confirmed DTM on seabed
December 2016	ROV GIV of DTM, risers and moorings
May 2017	Riser buoyancy modules removed
May 2018	Abandonment baseline survey consisting of GVI, NORM measurements, seabed and water sampling
February 2024	Eskdale-1 Wellhead General Visual Inspection

The inspections are detailed in and supplemented by the following reports:

- Stybarrow Field (WA-32-L) Subsurface Handover Document (BHPB-00SC-A030-0001) (2015): a hand-over document by Woodside summarising the state of equipment following cessation of production.
- Stybarrow Field DTM Buoy, Risers and Moorings Survey (BHPB-00SC-T400-0004) (2016): a technical note by Woodside summarising an ROV inspection of the sunken DTM.
- Stybarrow Field ROV Inspection Survey Report (DOF1-00SC-R400-0002) (2017): a survey report by DOF Subsea summarising the observations of equipment in the Stybarrow field following sinking of the DTM.
- Stybarrow Infrastructure Status (00SD-BHPB-T40-0002) (2017): a report by Woodside summarising the inspections, and status, of the equipment in WA-32-L.
- Woodside Stybarrow Abandonment Project – Radiological Assessment (BHPB-00SC-R000-0006) (SA Radiation, 2018a): a radiological assessment of naturally occurring radioactive materials (NORMs) within the subsea production equipment by SA Radiation. The report concluded NORMs were below the limits of detection in most of the equipment, with isolated areas of low-level NORMs contamination.
- Analysis of Sediment and Water Chemistry, Infauna, Epifauna and Fish in the Stybarrow Field (BHPB-00SC-R900-0001) (2019): an environmental survey within WA-32-L which indicated some localised elevated concentrations of metals in sediments around equipment.
- Eskdale-1 wellhead general visual inspection field memo (34EJ100054-DO-FM-012)

The Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003) details the equipment that will be removed from the Stybarrow field, including:

- DTM
- DTM mooring legs – chain and wire (excluding anchors)
- Mooring support buoys
- Flexible risers
- Flexible production flowlines
- Gas injection / lift flowlines

- Water injection flowlines
- Umbilicals
- Wells (Xmas trees and wellheads, excluding Eskdale-1 wellhead)
- Jumpers
- Water injection manifold
- Subsea distribution units
- Umbilical termination assemblies
- Anode skids

Plug and abandonment activities of wells within the Stybarrow field are described in the Stybarrow Plug and Abandonment EP (Document number: BHPB-00SC-N000-0005)

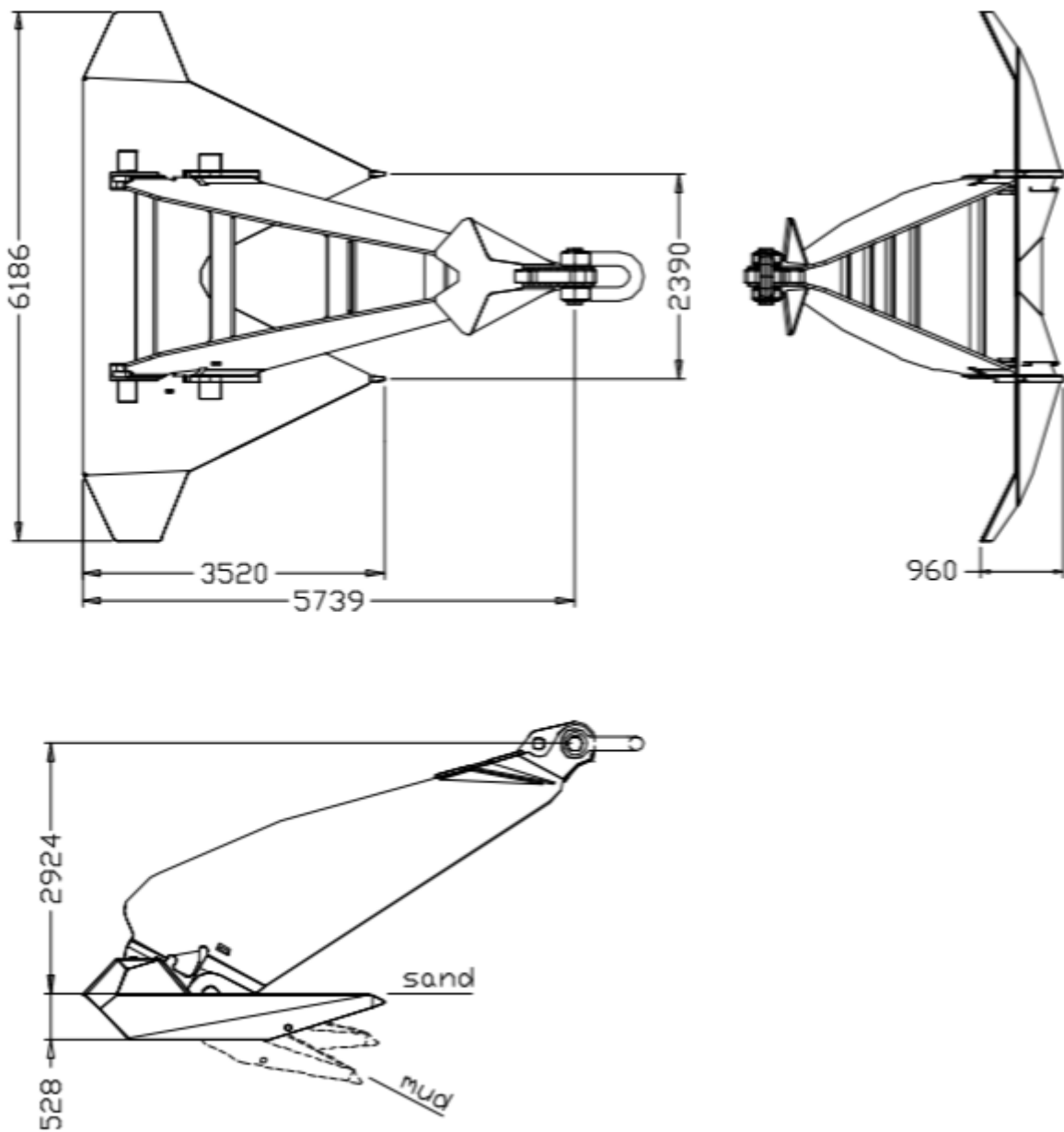
4.8.1 Anchors

The steel DTM mooring anchors are embedment-style anchors and are securely lodged in the seabed. Each anchor consists of flukes, a shank and a pad eye made of steel (**Figure 4-3**). The anchor design specification does not include requirement for an anti-corrosion coating to protect the anchors in the marine environment². The anchors are deeply buried and cannot practicably be visually inspected to confirm the absence of paint coating. However, based on the design specification, Woodside reasonably assumes that the anchors are unpainted. The type of anchor used for the DTM anchors are used both painted and unpainted in the offshore industry. Unpainted anchors may provide greater holding power due to increased friction with sediments; this is the rationale for the unpainted sections of the suction piles. The general arrangement of the mooring legs, including the anchors, is shown in **Figure 4-4**. Each anchor weighs approximately 11 tonnes. The positions of the anchors are provided in **Table 4-3** and shown in **Figure 4-3**. Visual inspections indicate the anchors are completely buried and the attached chain substantially buried (**Figure 4-5**), with no part of the anchors exposed above the seabed. Surveyed anchor burial depths are provided in **Table 4-5**.

Several of the burial depths provided in **Table 4-5** were not able to be reliably surveyed due to equipment limitations, and the depths of several anchors are likely to be under-estimated by the pipe tracker equipment used to estimate anchor burial depth. The anchor installation procedure required each anchor to be laid and tensioned to facilitate embedment, with each anchor tensioned with a load of approximately 160 tonnes. Sediments in the Stybarrow field are unconsolidated, muddy sediments that are easily penetrated by anchors during tensioning. On this basis, each anchor is reasonably assumed to be buried at least 1 m below the seabed.

The section of mooring leg chain attached to the anchors is called the ground chain (**Figure 4-4**). Each section of ground chain for each anchor is 310 m long, most of which is planned to be recovered during equipment removal. Ground chain consists of rig quality 3 (RQ3) grade carbon steel 84 mm in diameter, with a dry weight of 139 kg/m. The ground chain will be cut as close as practicable to the anchors, with < 10 m of chain expected to be left in situ for each anchor; however, Woodside has conservatively assumed up to 20 m of ground chain may be left in situ for each anchor in this EP. This equates to up to 2.78 t of ground chain per anchor, with a total weight of ground chain for all nine anchors of 25.02 t. Records of the exact composition of the ground chain are not available. Based on the composition of similar mooring chain, the ground chain is assumed to be > 98% iron, with traces of manganese (approximately 1.4%), carbon (approximately 0.26%), phosphorus (0.03%), and sulphur (approximately 0.03%).

² The design specification does require a protective coating to limit corrosion for up to six months during transportation. This coating is likely to be light oil rather than epoxy paint.



**For information only
Dimensions in mm.**

Figure 4-3: Anchor schematic for embedment anchors used in the Stybarrow field.

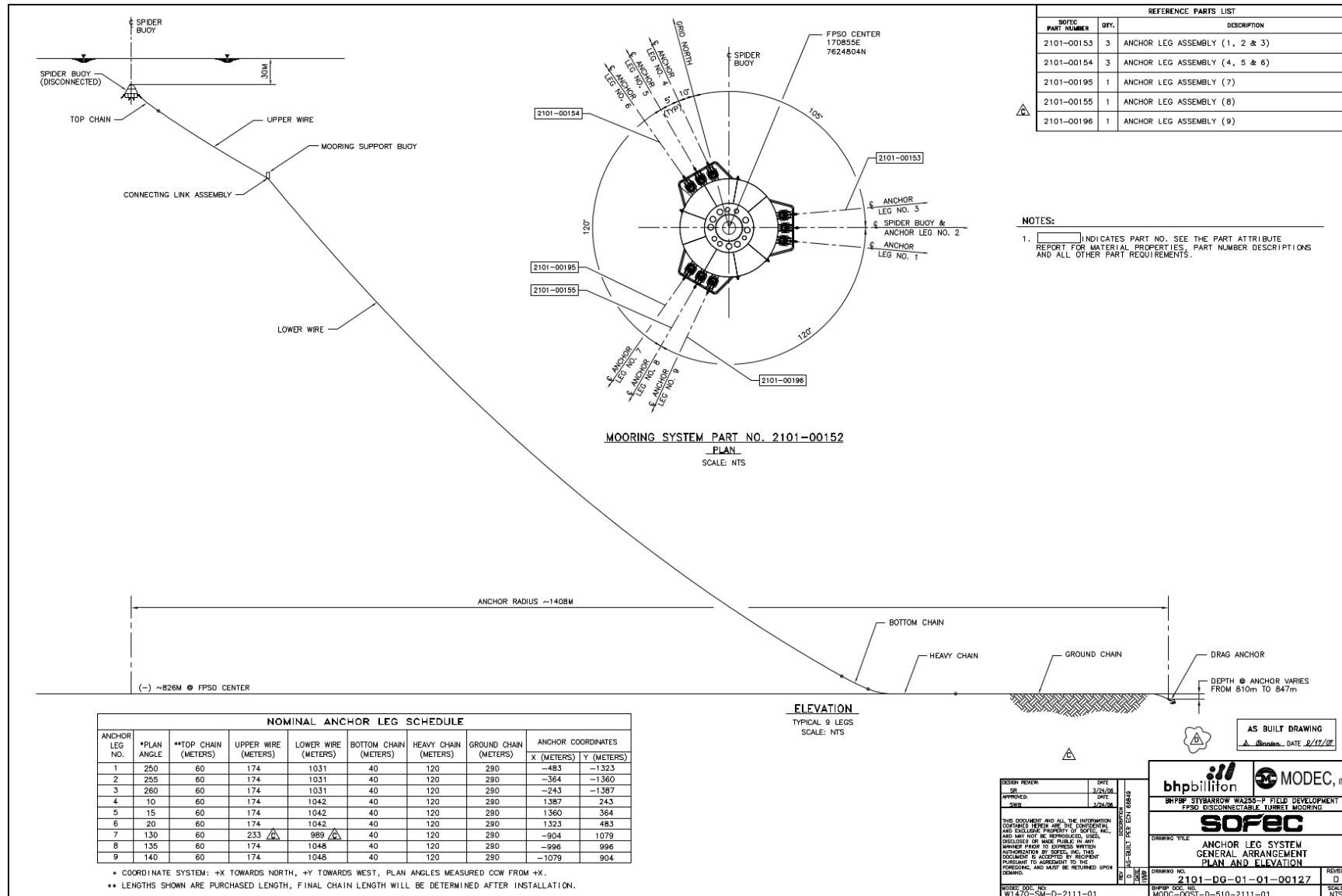


Figure 4-4: Anchor leg system general arrangement



Figure 4-5: Partially buried chain at mooring leg touchdown point (bottom/heavy chain in Figure 4-4) showing degree of burial several hundred metres from the associated anchor

Table 4-5: Anchor positions and depths (eastings and northings in MGA50/GDA94)

Mooring Leg Components	Easting (m)	Northing (m)	Water Depth (m)	Burial Depth (m)
Mooring 1 Anchor	172172.4	7624323.5	807.3	2.09
Mooring 2 Anchor	172215.2	7624441.7	807.5	2.28*
Mooring 3 Anchor	172237.1	7624561.1	807.6	2.30
Mooring 4 Anchor	170594.8	7626195.0	826.1	2.53*
Mooring 5 Anchor	170489.2	7626161.1	829.1	1.86*
Mooring 6 Anchor	170372.9	7626127.5	828.7	0.3*
Mooring 7 Anchor	169759.4	7623909.3	842.4	0.3*
Mooring 8 Anchor	169828.7	7623775.8	842.7	2.42*
Mooring 9 Anchor	169943.1	7623715.9	842.0	0.3*

*Possible anchor burial depth, report notes that pipe tracker equipment was out of range for these readings

4.8.2 Suction Piles

Nine suction piles are installed in the seabed, to which the risers are attached by holdback clamps. Each of these suction piles is approximately 7.5 m long and 4 m in diameter and weighs approximately 207 t (**Figure 4-6**). The suction piles are securely buried in the seabed. An additional suction pile is used as the foundation for the water injection manifold, which is approximately 7.83 m long and 6.42 m in diameter. All suction piles are made of low carbon steel, with trace amounts of alloying metals. Each pile has sacrificial anodes and an epoxy paint coating approximately 450 microns thick on the upper part of the pile intended to reduce corrosion. The majority of the pile surface buried in the seabed, including the entire interior surface of the piles, was not painted in order to enhance friction between the pile and the seabed, resulting in greater holding capacity. Based on ROV footage, the suction piles protrude between 0.75 -1 m above the seabed.

The positions of the riser base and water injection manifold suction piles are provided in **Table 4-6** and shown in **Figure 4-2**. All equipment attached to the suction piles, such as riser holdback clamps and the water injection manifold, will be removed prior to decommissioning *in situ*.

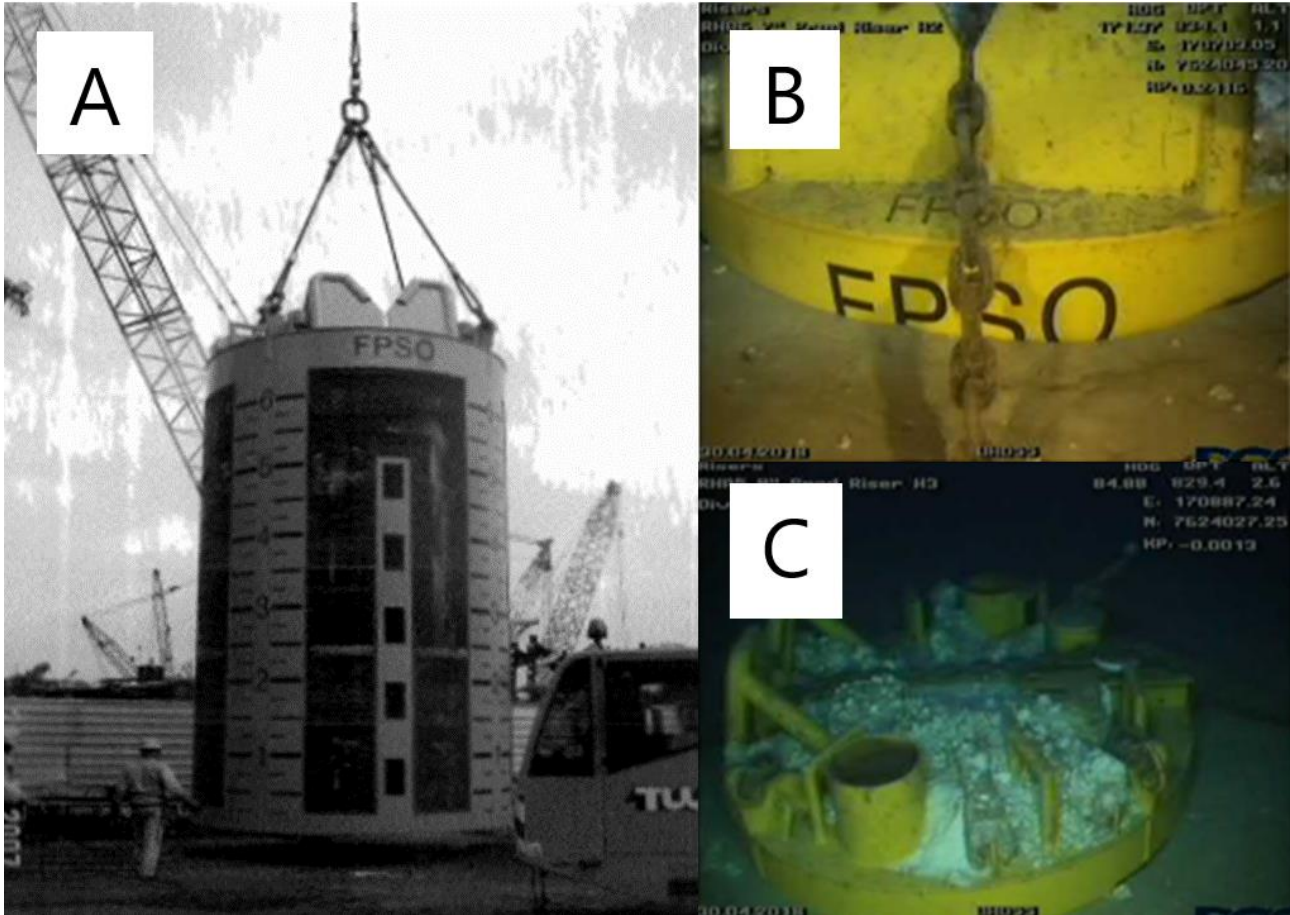


Figure 4-6: A riser holdback anchor suction pile prior to installation (A) and buried in the seabed (B and C)

Table 4-6: Suction pile positions (eastings and northings in MGA50/GDA94)

Riser Bases	Easting	Northing
Dynamic Umbilical Riser Base	171433.8	7625113.9
Water Injection 10" Riser base	171491.8	7624359.1
H4GL Gas Lift 6" Riser Base	171256.2	7624136.9
EG1 Gas Injection 6" Riser Base	171121.0	7625533.9
H4 Production 8" Riser Base	171080.4	7624061.0
H3 Production 8" Riser Base	170894.3	7624028.6
H2 Production 7" Riser Base	170704.2	7624040.9
H1 Production 7" Riser Base	170526.5	7624100.2
EH1 Production 6" Riser Base	170921.2	7625578.0
Water Injection Manifold Suction Pile Foundation	171486.5	7624333.0

4.8.3 Eskdale-1 Wellhead

The Eskdale-1 exploration well was drilled by BHP Billiton Petroleum Pty Ltd in 2003 and did not encounter commercially viable accumulations of hydrocarbons. Eskdale-1 was spudded on 14 March 2003, by the semi-submersible drill rig Atwood Falcon and drilled to a total depth of 3127 mRT using seawater with high-viscosity pre-hydrated gel sweeps and water-based muds³. The well is a DrilQuip SS-10C widely used by across the Woodside and hBHP portfolio. The well was subsequently permanently plugged and decommissioned with a total of three abandonment plugs at the conclusion of the drilling program⁴. The two attempts to cut and recover the wellhead were unsuccessful. BHP Billiton Petroleum Pty Ltd subsequently informed the Western Australian Department of Industry and Resources (DOIR) (the administrator of the petroleum title at the time) that recovery of the wellhead was not feasible, and that they intended to abandon the wellhead *in situ*. No records can be located to confirm that DOIR accepted the wellhead as-left status, hence it is included in the leave *in situ* scope.

The details of the well history and composition is summarised in **Table 4-7**. An indicative diagram of the wellhead left *in situ* is presented in **Figure 4-7**. The plug and abandonment (P&A) schematic representing the actual abandonment plug layout is shown in the final drilling report (BHP Billiton, 2003).

Table 4-7: Summary of Eskdale-1 wellhead

Well	Location	Drilling fluids	Displacement fluids (above the top cement plug)	Shallowest cement plug depth (mMDRT)	Wellhead and associated infrastructure remaining
Eskdale-1	170897.50 E 7634287.44 N	High viscosity pre-hydrated gel sweeps and water-based muds	Seawater (well in communication with marine environment)	873	One 30 inch wellhead housing, conductor and permanent guide base (no guideposts)

³ As noted in Section 2 Operational summary (pg. 9) of Eskdale-1 Final Drilling Report (BHP Billiton, 2003)

⁴ As noted in Section 1.3 abandonment schematic (pg. 6) of Eskdale-1 Final Drilling Report (BHP Billiton, 2003)



Figure 4-7: Diagram of wellhead structure representative of Eskdale-1 wellhead on the seabed

The Eskdale-1 wellhead is comprised of mild steel with ~3 kg of nitrile rubber (NBR) associated with hydraulic tubing and 3 O-rings. Surface coatings have been used on the wellhead for corrosion protection. Surface coatings and epoxy paints include Interseal 670HS, Tiger Brand Gloss Finish and Xylan 1052 as described in **Table 4-3**. The wellhead extends ~2.7 m the mudline to facilitate installation of guide bases, blowout preventers and was drilled with water-based muds (BHP Billiton, 2003). The total weight of the steel material varies very little between wellheads and is estimated to be about 7500 kg.

The release of fluids to the marine environment from the Eskdale-1 well below the permanent cement plugs installed during plug and abandonment is not credible. Eskdale-1 was not used as a production or injection well, hence there is no environmental risk from contaminants such as NORM or mercury from the production reservoir. The Eskdale-1 wellhead is uncapped. A GVI of the wellhead was conducted in February 2024. The survey confirmed the status of infrastructure and surrounding seabed (**Figure 4-8**). No gas emissions were observed.

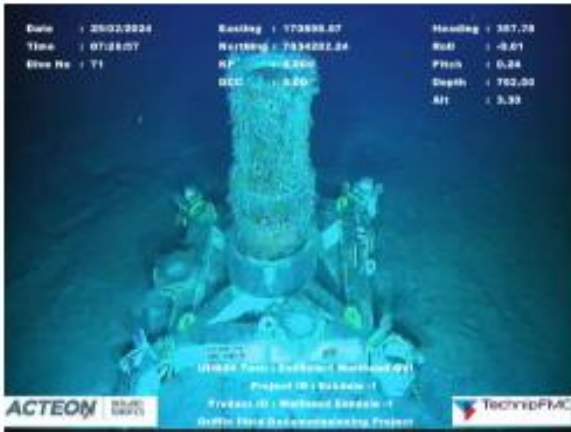


Figure 2 ESK-1 Heading North

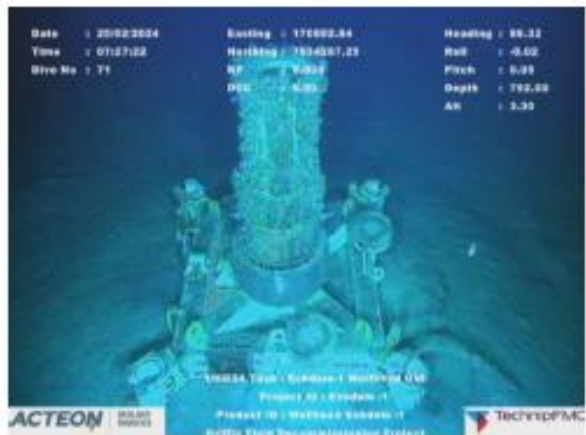


Figure 3 ESK-1 Heading East



Figure 4 ESK-1 Heading South

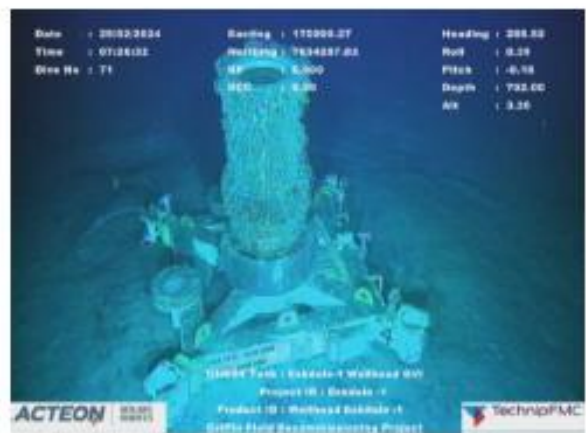


Figure 5 ESK-1 Heading West



Figure 6 West Bullseye

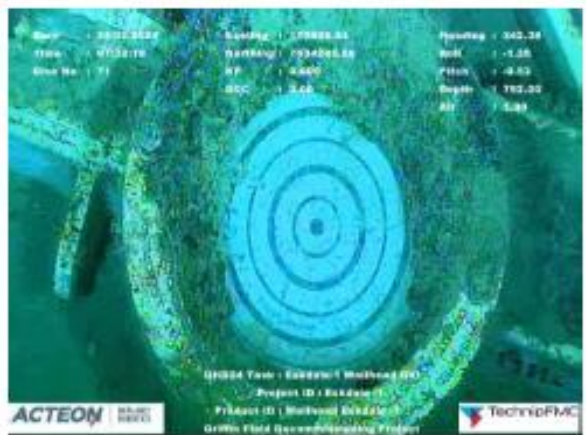


Figure 7 South Bullseye

Figure 4-8: Eskdale-1 wellhead ROV footage from February 2024 GVI

All other wellheads (excluding Eskdale-1) are for shut in production or injection wells with Xmas trees in place, providing a barrier between the well and the environment. Woodside will remove the trees and wellheads either during plug and abandonment or equipment removal activities (not in scope of this EP). Woodside has substantial experience in wellhead removal and is confident that these wellheads can be successfully removed below the mudline.

5 Description of the Environment

The purpose of this section is to address the requirements of Regulation 21(2) and 21(3) of the Environment Regulations through describing the existing environment, including values and sensitivities that may be affected by both planned activities and unplanned events.

The description of the environment applies to the EMBA (refer **Section 4.5**), the area encompassing a 500 m radius around the subsea infrastructure proposed to be decommissioned *in situ*. All impacts from the petroleum activity are expected to be localised to the footprint of the infrastructure, there is no credible oil spill scenario and no vessel-based operations associated with the petroleum activity, and the EMBA has been defined accordingly. **Section 8** contains further information on the spatial extent of the potential impacts associated with the petroleum activity that have been used to inform the spatial EMBA.

The information contained in this section has been used to inform the evaluation and assessment of the environmental impacts and risks presented in **Section 8**. The level of detail is appropriate to the nature and scale of the impacts and risks to the particular values and sensitivities.

5.1 Relevant Environmental Values and Sensitivities

Regulation 21(2) of OPGGS ((E) Regulations states that “*the environment plan must:*

- 21(2)(a) *Describe the existing environment that may be affected by the activity; and*
- 21(2)(b) *Include details of the particular relevant values and sensitivities (if any) of that environment”.*

Regulation 21(3) of the OPGGS (E) Regulations states that “*Without limiting paragraph 21(2)(b), particular relevant values and sensitivities may include any of the following:*

- 21(3)(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”.*

This section summarises environmental values and sensitivities, including physical, biological, socio-economic and cultural features in the marine and coastal environment that are relevant to the EMBA. Searches for matters of national environmental significance (MNES) and other matters protected by the EPBC Act were undertaken for the EMBA using the Protected Matters Search Tool (PMST).

A full description of the values and sensitivities relevant to the EMBA is provided in **Appendix D**, along with the PMST Search Tool Report.

5.1.1 Bioregions

The EMBA is located approximately 60 km north-west of Exmouth, Western Australia and within Commonwealth waters of the North West Marine Region. The EMBA overlaps the Northwest Provincial marine bioregion (**Figure 5-1**). **Appendix D** summarises the characteristics of this marine bioregion.

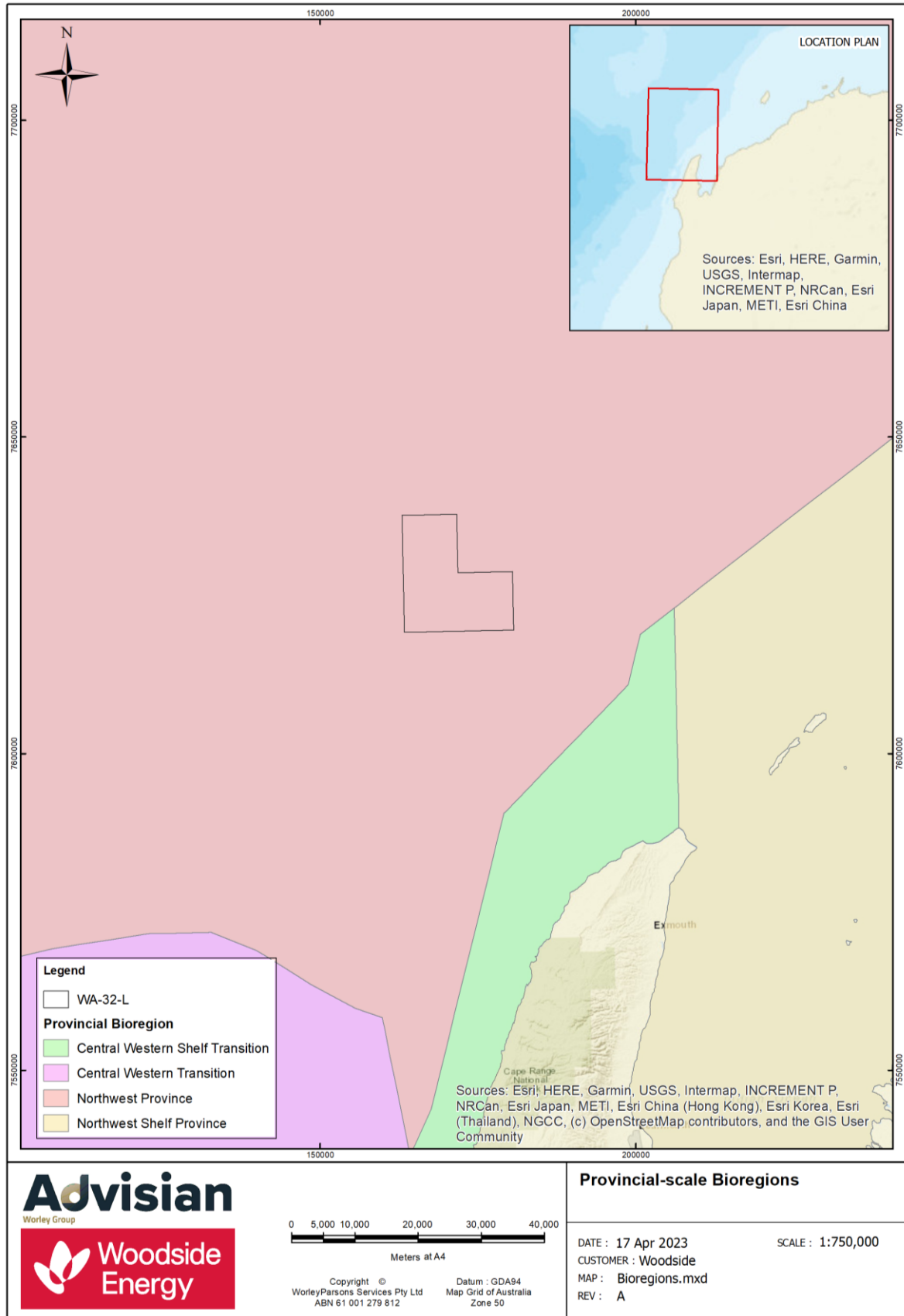


Figure 5-1: IMCRA 4.0 provincial bioregions in relation to the EMBA

5.1.2 Matters of National Environmental Significance

Table 5-1 summarises the MNES identified as potentially occurring within the EMBA determined by the PMST results (**Appendix D**).

Additional information on identified MNES are provided throughout this Section and in **Appendix D**.

Table 5-1: Summary of MNES within EMBA

MNES	Number	Relevant Section
World Heritage Properties	0	Not applicable
National Heritage Places	0	Not applicable
Wetlands of International Importance (Ramsar)	0	Not applicable
Marine Parks	0	Not applicable
Listed Threatened Ecological Communities	0	Not applicable
Listed Threatened Species ¹	20	Section 5.5.1
Listed Migratory Species ^{1, 2}	33	Section 5.5.1

Note 1 Terrestrial species (such as terrestrial mammals, reptiles, and bird species) that appear in the PMST results and do not have habitats along shorelines are not relevant to the petroleum activity impacts and risks and are not included in these numbers.

Note 2 The EPBC Act categorise migratory and threatened species independently, therefore migratory species can also be threatened.

5.2 Stybarrow Field Environmental Surveys

An environmental survey of the Stybarrow field (Cardno, 2019) was commissioned, the results of which are summarised below. Woodside commissioned a study of the canyon systems in the region (BMT Oceanica, 2016), which includes the Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula Key Ecological Feature (KEF). One of the canyons constituting this KEF lies in close proximity to the EMBA (**Figure 5-8**). Where relevant these studies have been referenced within this Section and throughout the EP.

5.3 Biological Environment

5.3.1 Sediments

Cardno (2019) studied the sediments in the Stybarrow field, with samples at a range of sites with varying distance from the equipment in the field (**Figure 5-2**). Sediment samples were taken using cores deployed from an ROV, with two replicate samples collected at each site.

Sediments within the Stybarrow field are composed largely of silt- (62.5 to 3.9 μm) and clay-sized (< 3.9 μm) particles, typically accounting for approximately 90% of the sediment at the sampled sites (**Figure 5-3**). The relatively small portion of coarser particles were characterised as fine or very fine sand (250 μm to 62.5 μm), with no larger particles (e.g., gravel) recorded. These results are consistent with sediments in similar water depths in the region (Baker et al., 2008).

Analysis of a suite of metals, including toxicants recognised by the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (Commonwealth of Australia and New Zealand Government, 2018), was undertaken and reported by Cardno (2019). Metal concentrations were generally consistent across all sites, with some notable exceptions (**Figure 5-4**):

- Strontium concentrations were generally lower at sites near Xmas trees compared to sites further away.

- Concentrations of lead, barium, boron and mercury were typically higher at sites near Xmas trees compared to sites further away.
- There was variability in some metal concentrations between samples within sites, particularly at sites close to Xmas trees.
- Increased barium concentrations around Xmas tree sites may be due to historical discharges of drilling fluids, which commonly contain barium sulphate (barite) as a weighting agent.

Concentrations of metals potentially discharged around Xmas trees during drilling (e.g., barium) decline rapidly with increasing distance from wells (**Figure 5-5**), indicating there is little transport of sediments within the Stybarrow field.

The *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (Commonwealth of Australia and New Zealand Government, 2018) provide default guideline values (DGVs) and upper guideline values (GV-High) for toxicants in sediments, including several of the metals recorded in the collected samples (Cardno, 2019). No concentrations of metals exceeded the GV-High values, but DGVs were exceeded for the following:

- Nickel DGV was exceeded at all sites except for the H1XT, H3XT, H4XT, EH1XT, E4 and E6 sites.
- Lead DGV was exceeded in one of two replicates at the H1XT and H3XT sites.
- Mercury DGV was exceeded in one of two replicates at the H1XT and H3XT sites.

The high level across many sites suggests that the concentrations of nickel are natural rather than the result of the Stybarrow field. This is consistent with the findings of BMT Oceanica (2016), which also found similar concentrations of nickel in canyons in the region. The concentrations of lead and mercury at the H1XT and H3XT sites may be the result of drilling activities. These two samples also recorded high levels of barium, which is a component of weighting agents used in drilling.

Hydrocarbon concentrations in the Stybarrow field tend to be higher at sites near Xmas trees (**Figure 5-6**). Like the higher concentrations of metals around Xmas trees, this may be the result of the discharge of drilling fluids and cuttings. Approximately 30% of Stybarrow crude is < C₁₆, yet hydrocarbon chains consistent with this are largely absent from the sediment samples (**Figure 5-6**), which indicates the hydrocarbon concentrations measured in sediments are not from produced fluids. This is consistent with the operation of the Stybarrow field, with the only notable breaking of containment occurring during the blockage and disconnection of the H4 flowline, which was blocked and capped during disconnection and hence did not release substantial hydrocarbons. Concentrations of benzene, toluene, ethylbenzene and xylene (often referred to as BTEX) were below the laboratory limits of reporting at all sites (Cardno, 2019).

Cardno (2019) reported activity of a range of radioisotopes in sediments from the Stybarrow field, with radioactivity generally consistent across all sites (**Figure 5-7**). Concentrations of polonium-210 were a notable exception, with much higher and more variable radioactivity recorded. While a high energy alpha emitter, the radioactivity attributed by Cardno (2019) to polonium-210 is anomalous, as polonium-210 activity is typically found at much lower concentrations than several of the other radioisotopes. Polonium-210 is a decay product of uranium-238 and radium-226 and has a half-life of 138 days. Given the radioactivity of uranium-238 and radium-226 are relatively low and consistent across all sites and the relatively short half-life of polonium-210, the highly variable and high levels of radioactivity attributed to polonium-210 appears unreliable.

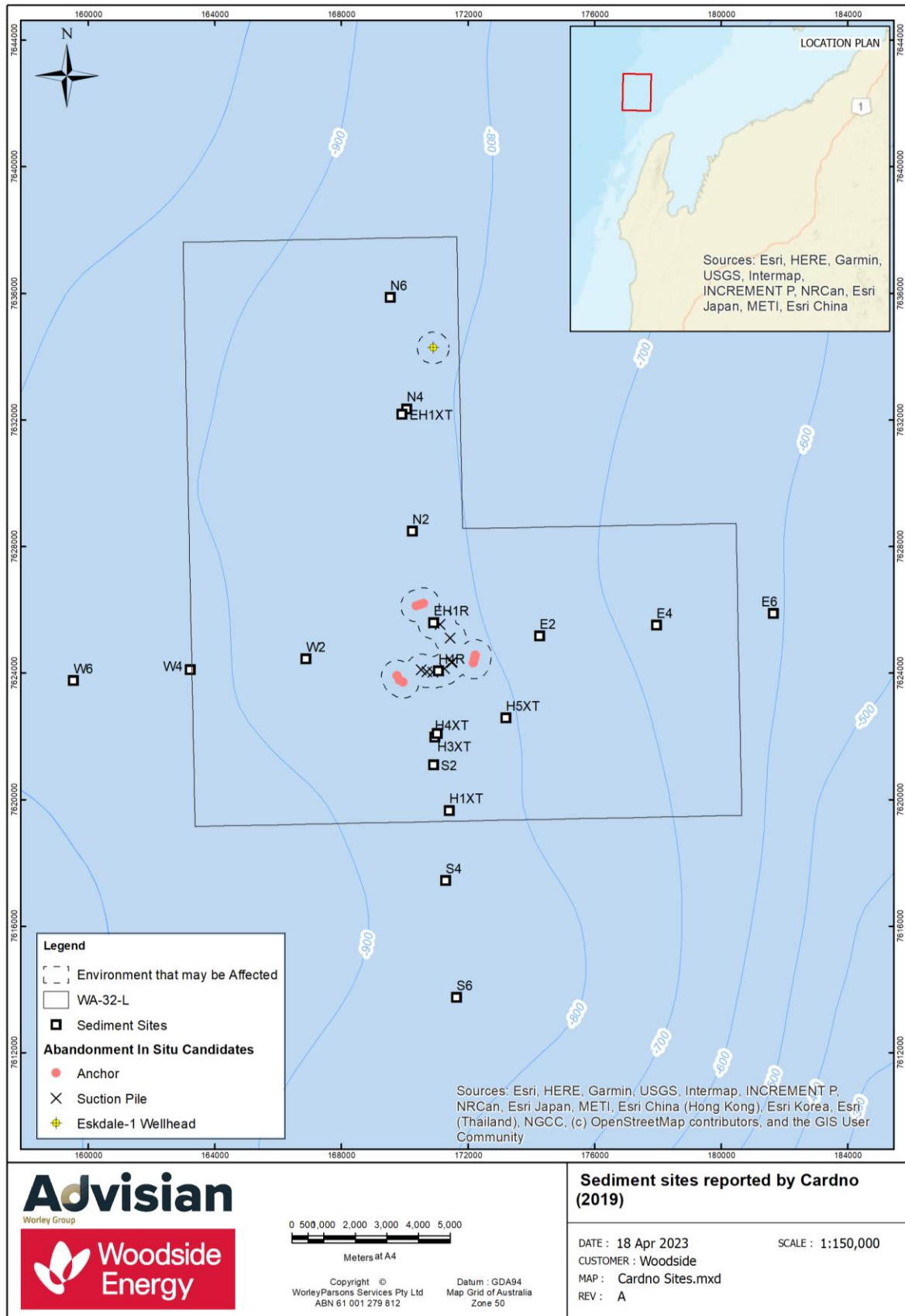


Figure 5-2: Cardno (2019) sediment sample sites

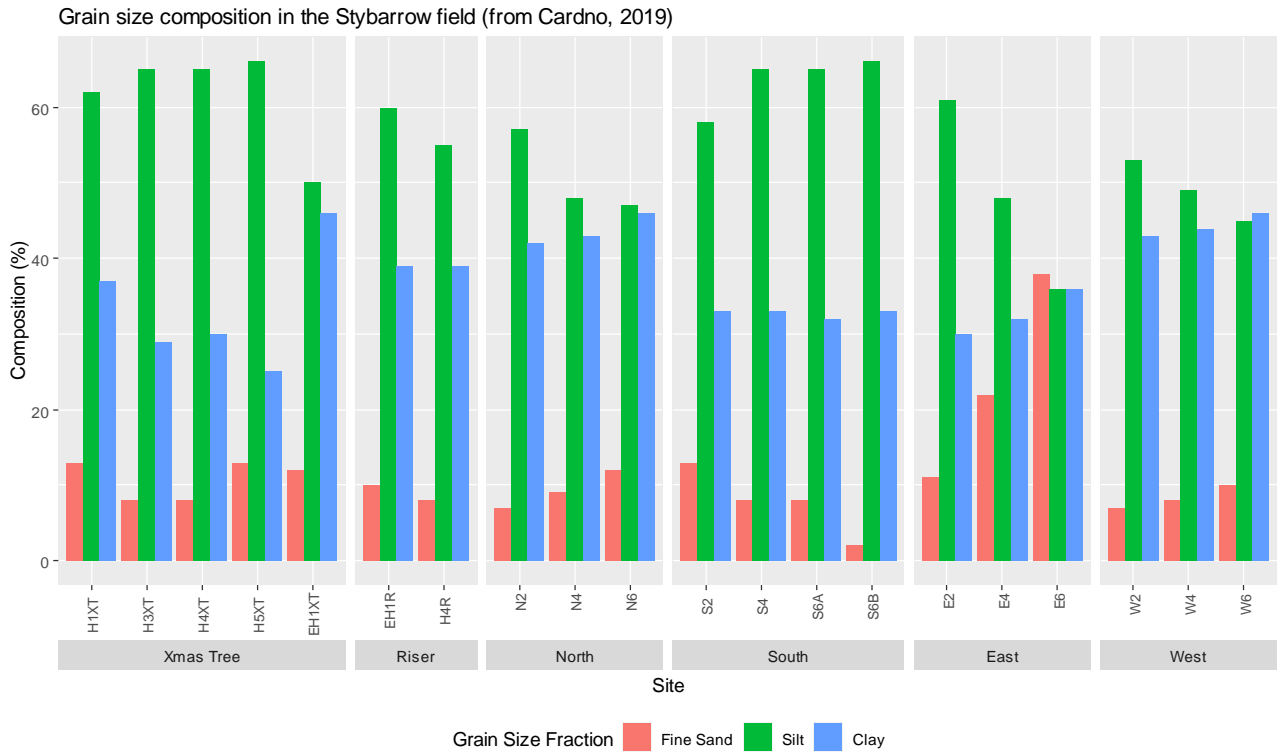


Figure 5-3: Percent composition of sediment grain size class in the Stybarrow field (from Cardno, 2019)

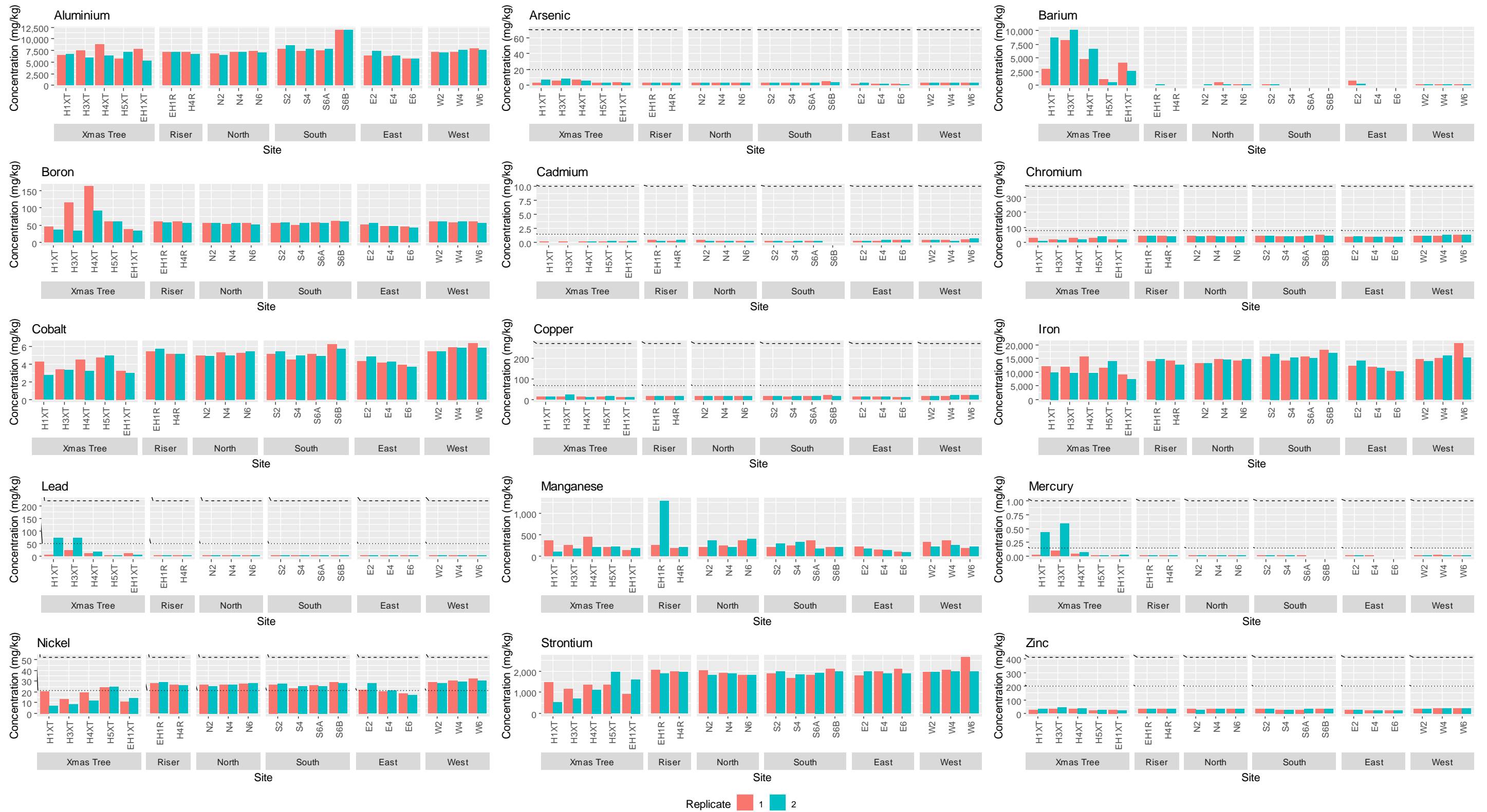


Figure 5-4: Concentrations of metals in the Stybarrow field with DGV (dotted lines) and GV-High (dashed lines) where available (after Cardno, 2019)

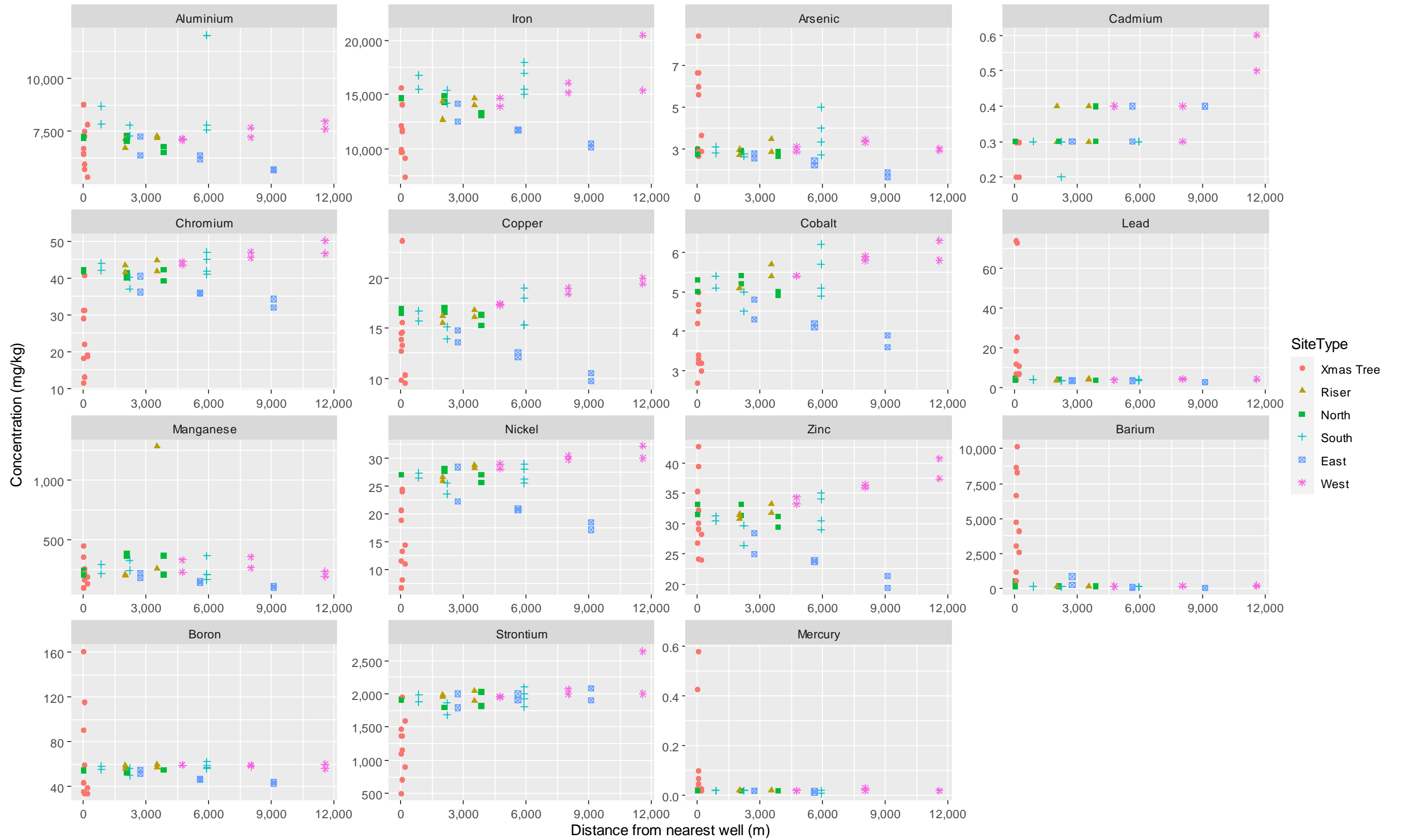


Figure 5-5: Concentrations of metals in sediments and distance from nearest well

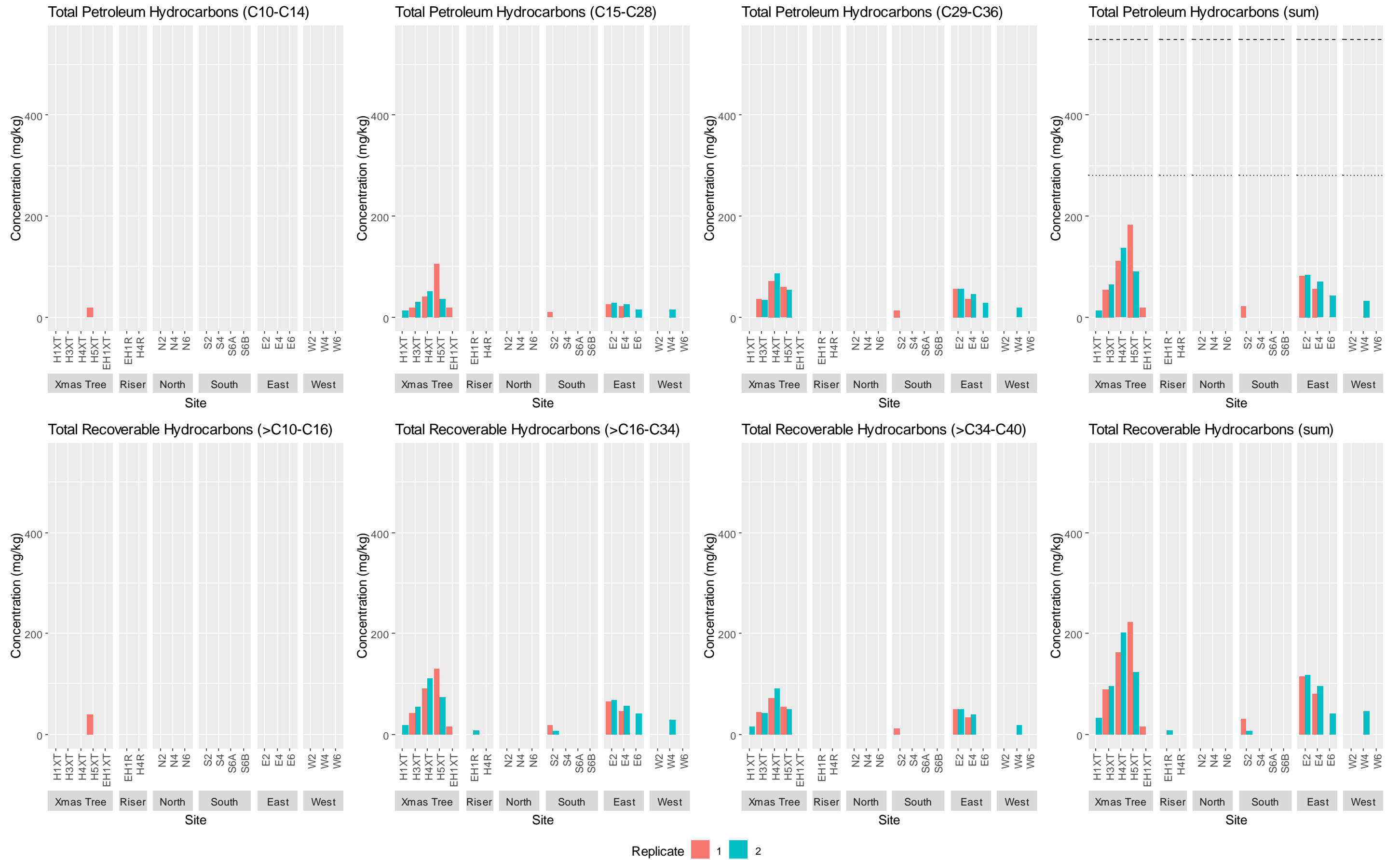


Figure 5-6: Concentrations of hydrocarbons (TPH and TRH) in the Stybarrow field with DGV (dotted lines) and GV-High (dashed lines) where available (after Cardno, 2019)

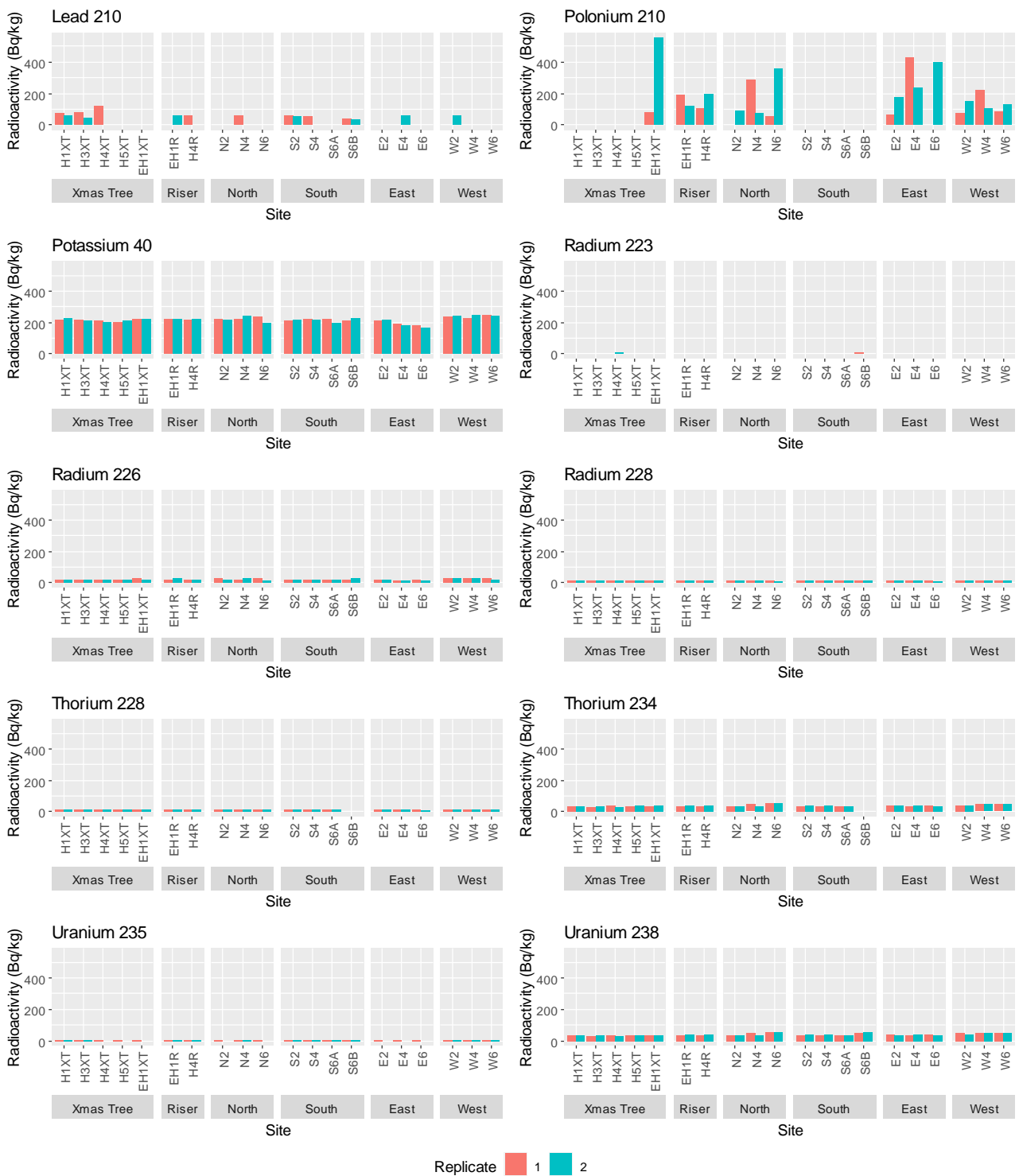


Figure 5-7: Radioactivity of radioisotopes in the Stybarrow field (after Cardno, 2019)

5.3.2 Benthic Habitats and Infauna

Cardno (2019) observed only unconsolidated sediment characterised by silt and clay fractions within WA-32-L (Figure 5-3), with no areas of hard substrate (with the exception of the Stybarrow field equipment). Few epifauna and demersal or benthic fish were observed by Cardno (2019), which is consistent with similar deep-water habitats in the region, with heart urchins, grenadier fish and decapods the most observed taxa.

Infauna sampling by ROV cores yielded very few infauna at impact and control sites in WA-32-L, indicating low density but widely distributed infauna assemblages (Cardno, 2019). This is consistent with other surveys

in the region (e.g., RPS, 2013). Because of the very low numbers of infauna in sediment samples, Cardno (2019) concluded there were no significant differences in infauna assemblages between sites. This conclusion should be regarded with caution, as hypothesis tests using the infauna data have very low power given the limited number of samples, the sampling method used (push cores) and the natural variability of infauna communities.

5.3.3 Water Quality

Cardno (2019) sampled surface waters in WA-32-L and found no evidence of contaminants. Given the depth of the equipment in the Stybarrow field, it is very unlikely that water from near the seabed would mix to the surface. The deeper parts of the water column below the thermocline are typically poorly mixed compared to surface waters and hence form an extensive barrier between water at the seabed and water at the surface.

5.4 Protected or Significant Areas

5.4.1 Key Ecological Features

Key ecological features (KEFs) are areas of regional importance for either biodiversity or ecosystem function and integrity within the Commonwealth marine environment and have been identified through the marine bioregional planning process.

One KEF was identified within the EMBA:

- Continental Slope Demersal Fish Communities

A detailed description of this KEFs is provided in **Appendix D**.

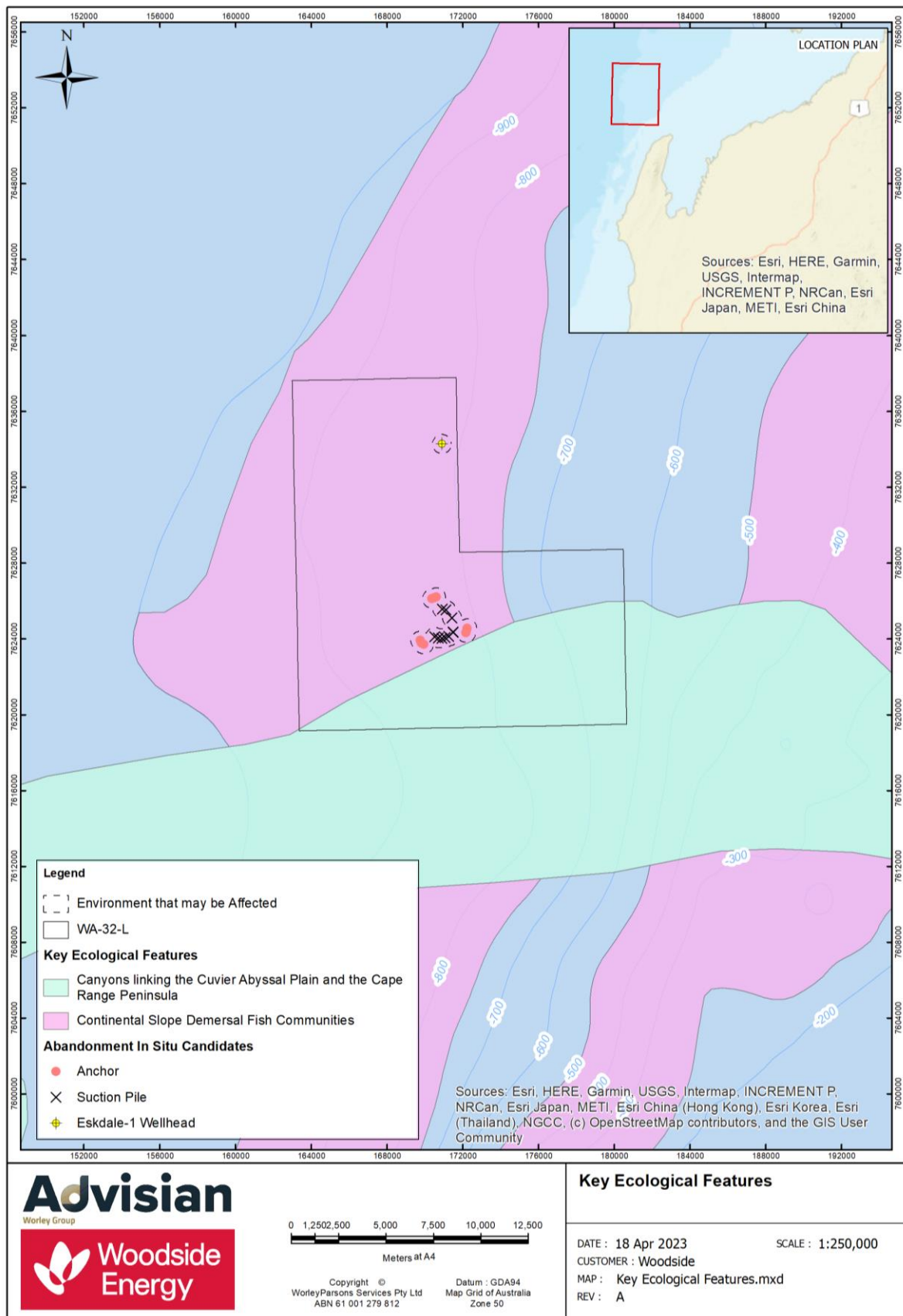


Figure 5-8: Key Ecological Features within the EMBA

Produced By: W. Chisholm

5.4.2 World Heritage Properties

World Heritage Properties represent the best examples of the world's cultural and natural heritage. There are no World Heritage Properties within the EMBA.

5.4.3 National Heritage Properties

Australia's national heritage comprises exceptional natural and cultural places that contribute to Australia's national identity. There are no National Heritage Places within the EMBA.

5.4.4 Commonwealth Heritage Properties

The Commonwealth Heritage List is a list of Indigenous, historic and natural heritage places owned or controlled by the Australian Government. There are no Commonwealth Heritage Places within the EMBA.

5.4.5 Marine Protected Areas

There are no Australian or State Marine Parks located in the EMBA.

5.5 Marine Fauna

5.5.1 Threatened and Migratory Species

Table 5-2 presents the threatened and migratory species within the EMBA. These include all relevant MNES protected under the EPBC Act, as identified in the PMST search for the EMBA (PMST search results are provided in **Appendix D**). For each species identified, the extent of likely presence is noted.

The PMST results identified 20 marine fauna species listed as 'threatened' species and 31 marine fauna species listed as 'migratory' within the EMBA. A description of the identified threatened and migratory species is included in **Appendix D**.

Species with designated biologically important areas (BIAs) and Habitat Critical to their Survival (critical habitat) overlapping the EMBA have been identified in **Section 5.5.2**.

Table 5-2: Threatened and migratory species predicted to occur within the EMBA.

Value/Sensitivity Common Name	Scientific Name	Threatened Status	Migratory Status	Sensitivities within EMBA
Fish, Sharks and Rays				
Oceanic whitetip shark	<i>Carcharhinus longimanus</i>	-	Migratory	Species or species habitat may occur within area
White shark, great white shark	<i>Carcharodon carcharias</i>	Vulnerable	Migratory	Species or species habitat may occur within area
Shortfin mako, mako shark	<i>Isurus oxyrinchus</i>	-	Migratory	Species or species habitat likely to occur within area
Longfin mako	<i>Isurus paucus</i>	-	Migratory	Species or species habitat likely to occur within area
Giant manta ray	<i>Mobula birostris</i>	-	Migratory	Species or species habitat likely to occur within area
Scalloped hammerhead	<i>Sphyrna lewini</i>	Conservation Dependent	-	Species or species habitat may occur within area
Southern bluefin tuna	<i>Thunnus maccoyii</i>	Conservation Dependent	-	Species or species habitat likely to occur within area
Marine Mammals				
Antarctic minke whale, dark-shoulder minke whale	<i>Balaenoptera bonaerensis</i>	-	Migratory	Species or species habitat likely to occur within area
Sei whale	<i>Balaenoptera borealis</i>	Vulnerable	Migratory	Species or species habitat likely to occur within area
Bryde's whale	<i>Balaenoptera edeni</i>	-	Migratory	Species or species habitat likely to occur within area

Value/Sensitivity Common Name	Scientific Name	Threatened Status	Migratory Status	Sensitivities within EMBA
Blue whale	<i>Balaenoptera musculus</i>	Endangered	Migratory	Migration route known to occur within area
Fin whale	<i>Balaenoptera physalus</i>	Vulnerable	Migratory	Species or species habitat likely to occur within area
Southern right whale	<i>Eubalaena australis</i>	Endangered	Migratory ⁵	Species or species habitat may occur within area
Humpback whale	<i>Megaptera novaeangliae</i>	-	Migratory	Species or species habitat likely to occur within area
Killer whale, orca	<i>Orcinus orca</i>	-	Migratory	Species or species habitat may occur within area
Sperm whale	<i>Physeter macrocephalus</i>	-	Migratory	Species or species habitat may occur within area
Australian snubfin dolphin	<i>Orcaella heinsohni</i>	-	Migratory	Species or species habitat may occur within area
Australian humpback dolphin	<i>Sousa sahalensis</i> as <i>Sousa chinensis</i>	-	Migratory	Species or species habitat may occur within area
Spotted bottlenose dolphin (Arafura/Timor Sea populations)	<i>Tursiops aduncus</i> (Arafura/Timor Sea populations)	-	Migratory	Species or species habitat may occur within area
Marine Reptiles				
Loggerhead turtle	<i>Caretta caretta</i>	Endangered	Migratory	Species or species habitat known to occur within area
Green turtle	<i>Chelonia mydas</i>	Vulnerable	Migratory	Species or species habitat known to occur within area

⁵ as *Balaena glacialis australis*

Value/Sensitivity Common Name	Scientific Name	Threatened Status	Migratory Status	Sensitivities within EMBA
Leatherback turtle, leathery turtle, luth	<i>Dermochelys coriacea</i>	Endangered	Migratory	Species or species habitat known to occur within area
Hawksbill turtle	<i>Eretmochelys imbricata</i>	Vulnerable	Migratory	Species or species habitat known to occur within area
Flatback turtle	<i>Natator depressus</i>	Vulnerable	Migratory	Species or species habitat known to occur within area
Marine Birds				
Common sandpiper	<i>Actitis hypoleucos</i>	-	Migratory	Species or species habitat may occur within area
Common noddy	<i>Anous stolidus</i>	-	Migratory	Species or species habitat may occur within area
Sharp-tailed sandpiper	<i>Calidris acuminata</i>	-	Migratory	Species or species habitat may occur within area
Red knot, knot	<i>Calidris canutus</i>	Endangered	Migratory	Species or species habitat may occur within area
Curlew sandpiper	<i>Calidris ferruginea</i>	Critically Endangered	Migratory	Species or species habitat may occur within area
Pectoral sandpiper	<i>Calidris melanotos</i>	-	Migratory	Species or species habitat may occur within area
Lesser frigatebird, least frigatebird	<i>Fregata ariel</i>	-	Migratory	Species or species habitat may occur within area
Southern giant-petrel, southern giant petrel	<i>Macronectes giganteus</i>	Endangered	Migratory	Species or species habitat may occur within area
Eastern curlew, far eastern curlew	<i>Numenius madagascariensis</i>	Critically Endangered	Migratory	Species or species habitat may occur within area

Value/Sensitivity Common Name	Scientific Name	Threatened Status	Migratory Status	Sensitivities within EMBA
White-tailed tropicbird	<i>Phaethon lepturus</i>	-	Migratory	Species or species habitat may occur within area
Christmas Island white-tailed tropicbird, golden bosunbird	<i>Phaethon lepturus fulvus</i>	Endangered	-	Species or species habitat may occur within area
Soft-plumaged petrel	<i>Pterodroma mollis</i>	Vulnerable	-	Species or species habitat may occur within area
Australian fairy tern	<i>Sternula nereis nereis</i>	Vulnerable	-	Foraging, feeding or related behaviour likely to occur within area
Indian yellow-nosed albatross	<i>Thalassarche carteri</i>	Vulnerable	Migratory	Species or species habitat may occur within area

5.5.2 Biologically Important Areas and Critical Habitats

Biologically important areas (BIAs) are those locations where aggregations of members of a species are known to undertake biologically important behaviours, such as breeding, resting, foraging or migration. BIAs have been identified using expert scientific knowledge about species abundance, distribution, and behaviours. BIAs are not recognised by the EPBC Act but are identified by DAWE to aid in the management and protection of threatened fauna.

BIAs overlapping the EMBA are:

- Pygmy blue whale migration (**Figure 5-9**)
- Pygmy blue whale distribution (**Figure 5-9**)
- Wedge-tailed shearwater breeding (**Figure 5-10**)

Habitats critical for the survival of a species, referred to as critical habitats, are recognised under the EPBC Act. Critical habitats may be identified in species recovery plans made under the EPBC Act or listed on the register of critical habitat maintained by the minister under the EPBC Act. Woodside considers critical habitats carry greater weight than BIAs. No habitats critical for the survival of a species overlap the EMBA.

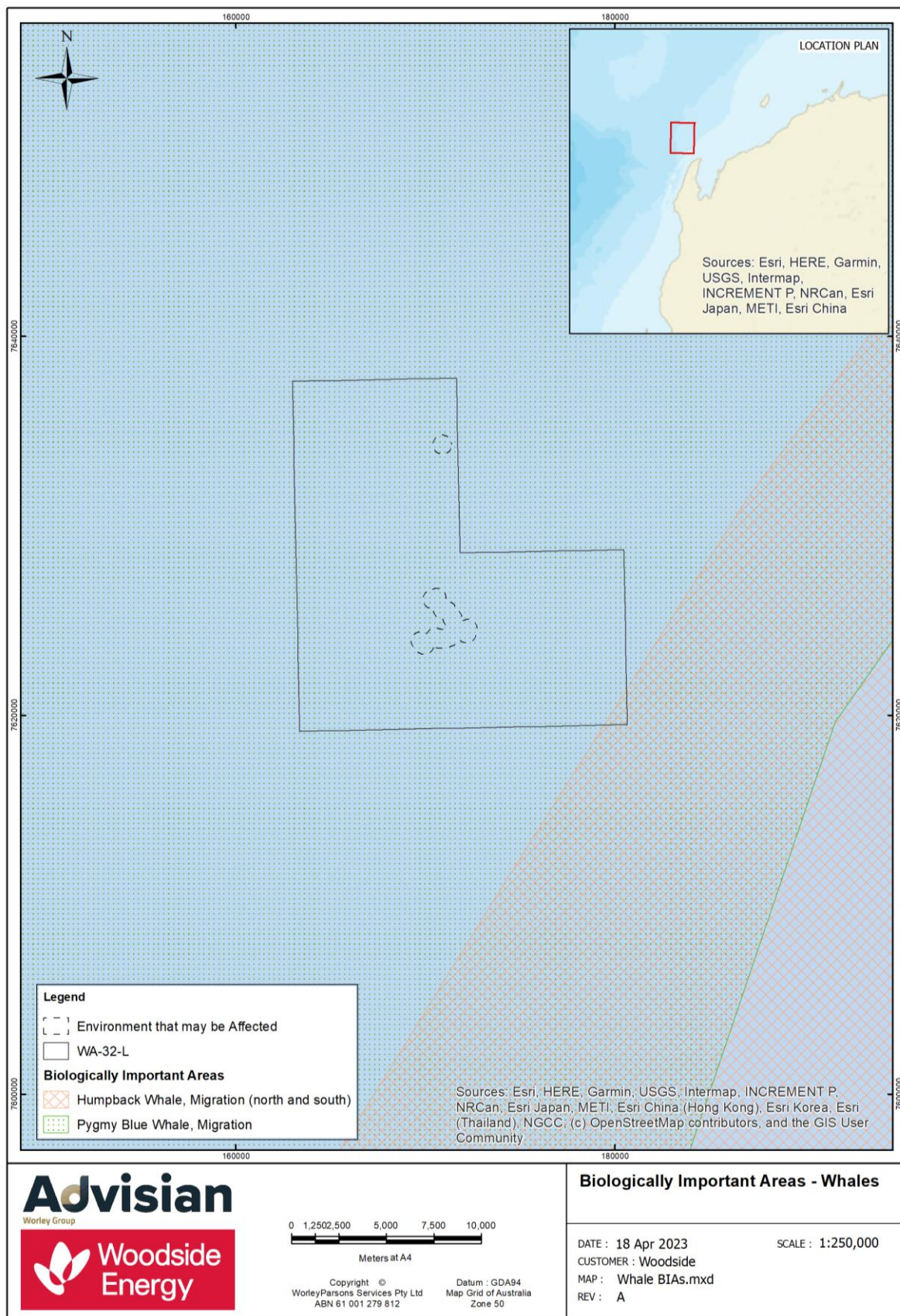


Figure 5-9: Whale biologically important areas in relation to the EMBA

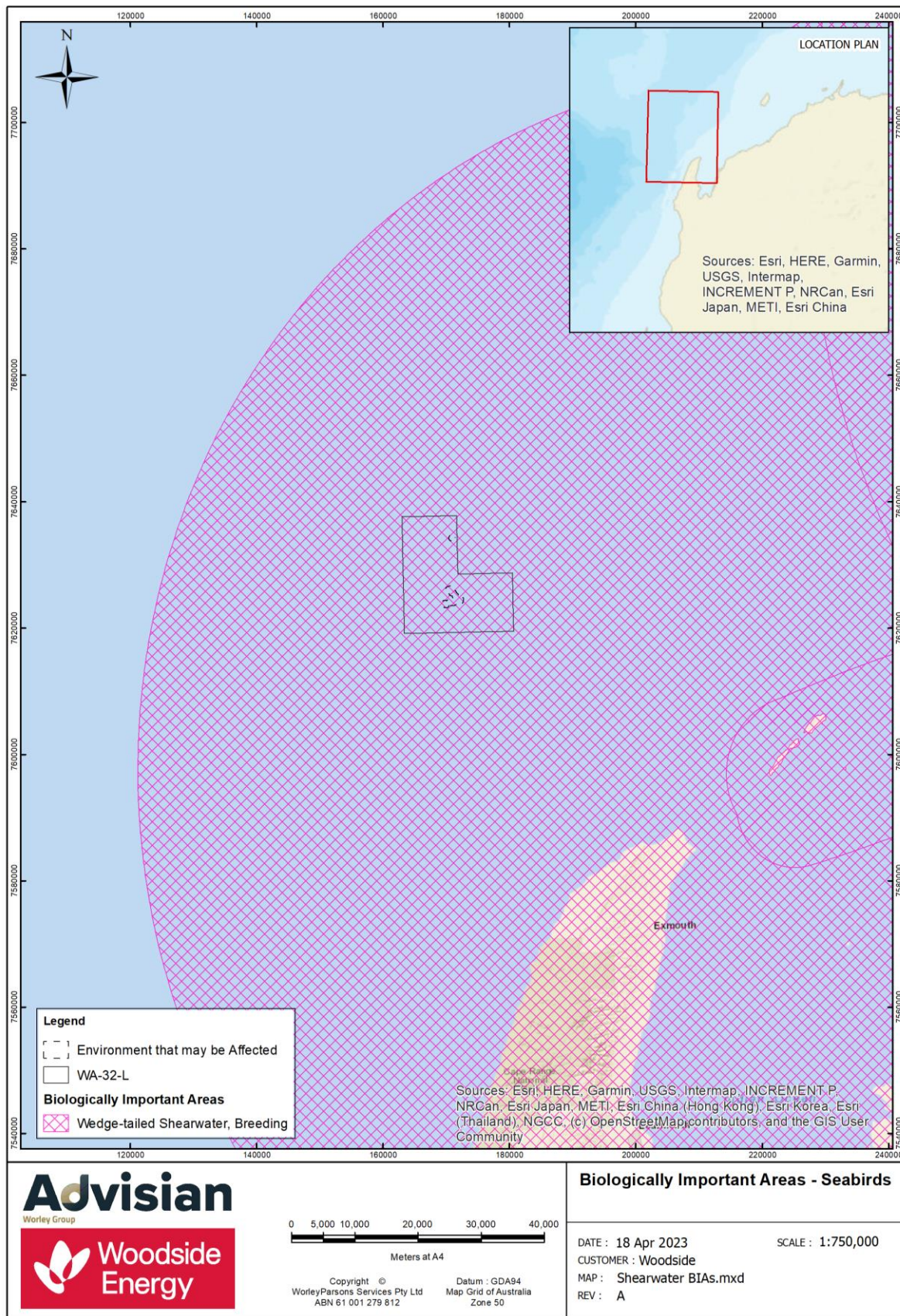


Figure 5-10: Wedge-tailed shearwater biologically important areas in relation to the EMBA

5.5.3 Species Recovery Plans, Conservation Advice and Threat Abatement Plans

Woodside considered recovery plans, conservation management plans, threat abatement plans or approved conservation advice in place for EPBC Act-listed threatened species that may potentially occur or use habitat within the EMBA (**Table 5-3**).

Recovery plans set out the research and management actions necessary to stop the decline of and support the recovery of listed threatened species. In addition, threat abatement plans provide for the research, management, and other actions necessary to reduce the impact of a listed key threatening process on native species and ecological communities. The Minister decides whether a threat abatement plan is required for key threatening processes listed under Section 183 of the EPBC Act. **Table 5-3** provides information about the specific requirements of the relevant conservation advice, species recovery plans and threat abatement plans that apply to the petroleum activities, and demonstrates how current management requirements have been considered while preparing the EP. Through implementing relevant control measures, performance outcomes and performance standards, potential risks and impacts of the petroleum activities are managed to ALARP and acceptable levels.

Table 5-3 summarises the actions relevant to the petroleum activity, with more information about the specific requirements of the relevant plans of management (including Conservation Advice and Conservation Management Plans) applicable to the petroleum activity and demonstrates where management requirements have been addressed.

Table 5-3: Recovery plans, conservation advice and threat abatement plans relevant to the petroleum activity.

Common Name	Recovery Plan / Conservation Advice / Management Plan	Threats identified that may Arise from the Petroleum Activity	Relevant EP Section
All Vertebrate Fauna			
All vertebrate fauna	Threat Abatement Plan for the Impacts of Marine Debris on the Vertebrate Wildlife of Australia's Coasts and Oceans (Commonwealth of Australia, 2018)	No identified threats arising from petroleum activity	Not applicable
Fishes, Sharks and Rays			
White Shark, Great White Shark	Recovery Plan for the White Shark (<i>Carcharodon carcharias</i>) (Department of Sustainability, Environment, Water, Population and Communities, 2013)	No identified threats arising from petroleum activity	Not applicable
Marine Mammals			
Blue Whale	Conservation Management Plan for the Blue Whale: A Recovery Plan under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> 2015-2025 (Commonwealth of Australia, 2015)	No identified threats arising from petroleum activity	Not applicable
Sei Whale	Conservation Advice <i>Balaenoptera borealis</i> Sei Whale (Threatened Species Scientific Committee, 2015a)	No identified threats arising from petroleum activity	Not applicable
Fin Whale	Conservation Advice <i>Balaenoptera physalus</i> Fin Whale (Threatened Species Scientific Committee, 2015b)	No identified threats arising from petroleum activity	Not applicable
Southern Right Whale	Conservation Management Plan for the Southern Right Whale: A Recovery Plan under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> 2011-2021 (Department of	No identified threats arising from petroleum activity	Not applicable

Common Name	Recovery Plan / Conservation Advice / Management Plan	Threats identified that may Arise from the Petroleum Activity	Relevant EP Section
	Sustainability, Environment, Water, Population and Communities, 2012)		
Marine Reptiles			
Loggerhead Turtle	Recovery Plan for Marine Turtles in Australia 2017-2027 (Commonwealth of Australia, 2017)	No identified threats arising from petroleum activity	Not applicable
Leatherback Turtle, Leathery Turtle, Luth	Recovery Plan for Marine Turtles in Australia 2017-2027 (Commonwealth of Australia, 2017)	No identified threats arising from petroleum activity	Not applicable
	Approved Conservation Advice for <i>Dermochelys coriacea</i> (Leatherback Turtle) (Threatened Species Scientific Committee, 2008)	No identified threats arising from petroleum activity	Not applicable
Hawksbill Turtle	Recovery Plan for Marine Turtles in Australia 2017-2027 (Commonwealth of Australia, 2017)	No identified threats arising from petroleum activity	Not applicable
Green Turtle	Recovery Plan for Marine Turtles in Australia 2017-2027 (Commonwealth of Australia, 2017)	No identified threats arising from petroleum activity	Not applicable
Flatback Turtle	Recovery Plan for Marine Turtles in Australia 2017-2027 (Commonwealth of Australia, 2017)	No identified threats arising from petroleum activity	Not applicable
Seabirds and Migratory Shorebirds			
Eastern Curlew, Far Eastern Curlew	Conservation Advice <i>Numenius madagascariensis</i> Eastern Curlew (Threatened Species Scientific Committee, 2015c)	No identified threats arising from petroleum activity	Not applicable
Curlew Sandpiper	Conservation Advice <i>Calidris ferruginea</i> Curlew Sandpiper (Threatened Species Scientific Committee, 2015d)	No identified threats arising from petroleum activity	Not applicable
Southern Giant-Petrel, Southern Giant Petrel	National Recovery Plan for Threatened Albatrosses and Giant Petrels 2011-2016 (Department of	No identified threats arising from petroleum activity	Not applicable

Common Name	Recovery Plan / Conservation Advice / Management Plan	Threats identified that may Arise from the Petroleum Activity	Relevant EP Section
	Sustainability, Environment, Water, Population and Communities, 2011)		
Red Knot, Knot	Conservation Advice <i>Calidris canutus</i> Red Knot (Threatened Species Scientific Committee, 2016)	No identified threats arising from petroleum activity	Not applicable
Indian Yellow-nosed Albatross	National Recovery Plan for Threatened Albatrosses and Giant Petrels 2011-2016 (Department of Sustainability, Environment, Water, Population and Communities, 2011)	No identified threats arising from petroleum activity	Not applicable
Australian Fairy Tern	Conservation Advice for <i>Sternula nereis nereis</i> (Fairy Tern) (Threatened Species Scientific Committee, 2011)	No identified threats arising from petroleum activity	Not applicable
Soft-plumaged Petrel	Conservation Advice <i>Pterodroma mollis</i> Soft-plumage Petrel (Threatened Species Scientific Committee, 2015e)	No identified threats arising from petroleum activity	Not applicable

5.6 Socio-economic

5.6.1 Cultural Values and Heritage Features

5.6.1.1 Background

Woodside recognises the ‘environment’ for the purposes of the evaluation required under the Environment Regulations include:

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

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

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

Woodside has undertaken archaeological assessments and ethnographic surveys to identify potential cultural values or features that may be impacted by Scarborough activities. These works have not identified heritage places, objects or values which will be impacted by the activities planned under this EP. However, through consultation with relevant persons, Woodside recognises the deep spiritual and cultural connection to the environment that First Nations people hold.

5.6.1.2 First Nations peoples

As a starting point for understanding social and cultural features of the environment for Indigenous (First Nations) groups, Woodside uses the existing systems, such as native title, to identify Indigenous groups that may have functions, interests or activities that may be affected. To that end, Woodside identifies native title representative bodies and nominated representative entities (as defined in **Section 6.5.2.1**), as well as native title claims, determinations and Indigenous Land Use Agreements (ILUAs) which the EMBA overlaps. Native title claims, determinations and ILUAs are defined under the *Native Title Act 1993* (Cth). While acknowledging that cultural features and heritage values may exist outside of the native title framework, Woodside considers this to be the broadest extent over which 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 which asserts it holds native title rights and interests in an area of land and/or water, according to its traditional laws and customs. By making a claim, the native title claim group seeks a decision that native title exists so that its native title rights and interests are recognised by the common law of Australia. This is called a native title determination. A determination is a decision by a recognised body, such as the Federal Court or High Court of Australia, that native title either does or does not exist in relation to a particular area ([National Native Title Tribunal](#)).

A requirement to establishing a positive determination of native title in court is proving that there is an organised society that occupied land and/or waters at the time of British annexation and that there is a continuous system of law and customs that gives right to the land or waters, and that this has been handed down from generation to generation. 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 utilized in a way determined by that society. There must, of course, be a society sufficiently organized to create and sustain rights and duties...

Therefore, Woodside understands that native title rights and interests are held communally by an organised society, that native title claims are understood to represent the area over which 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 (section 57, *Native Title Act 1993*) in trust or as agent for native title holders. The National Native Title Register holds information about the determination of claimant applications.

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

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

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

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

For the activity in this EP, there are no native title claims or determinations or ILUAs overlapping the EMBA (**Figure 5-11**). Therefore, Woodside understands that no native title rights or interests will be impacted by the activity. A summary of native title claims, determinations and ILUAs which are coastally adjacent to the EMBA is set out in Table 5-4. Claims and determinations have not been differentiated in this table, as it is acknowledged that rights and interests may exist within either of these.

5.6.1.3 Coastally Adjacent First Nations Groups

Woodside understands that 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 which may exist outside of native title claim, determination and ILUA areas, Woodside considers native title claims, determinations, and ILUAs coastally adjacent to the EMBA to be an instructive means of identifying potentially relevant First Nations groups to be consulted.

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

A summary of native title claims, determinations and ILUAs overlapping or coastally adjacent to the EMBA is set out in **Table 5-4**. Claims and determinations have not been differentiated in this table, as it is acknowledged that either of these may indicate the existence of rights and interests.

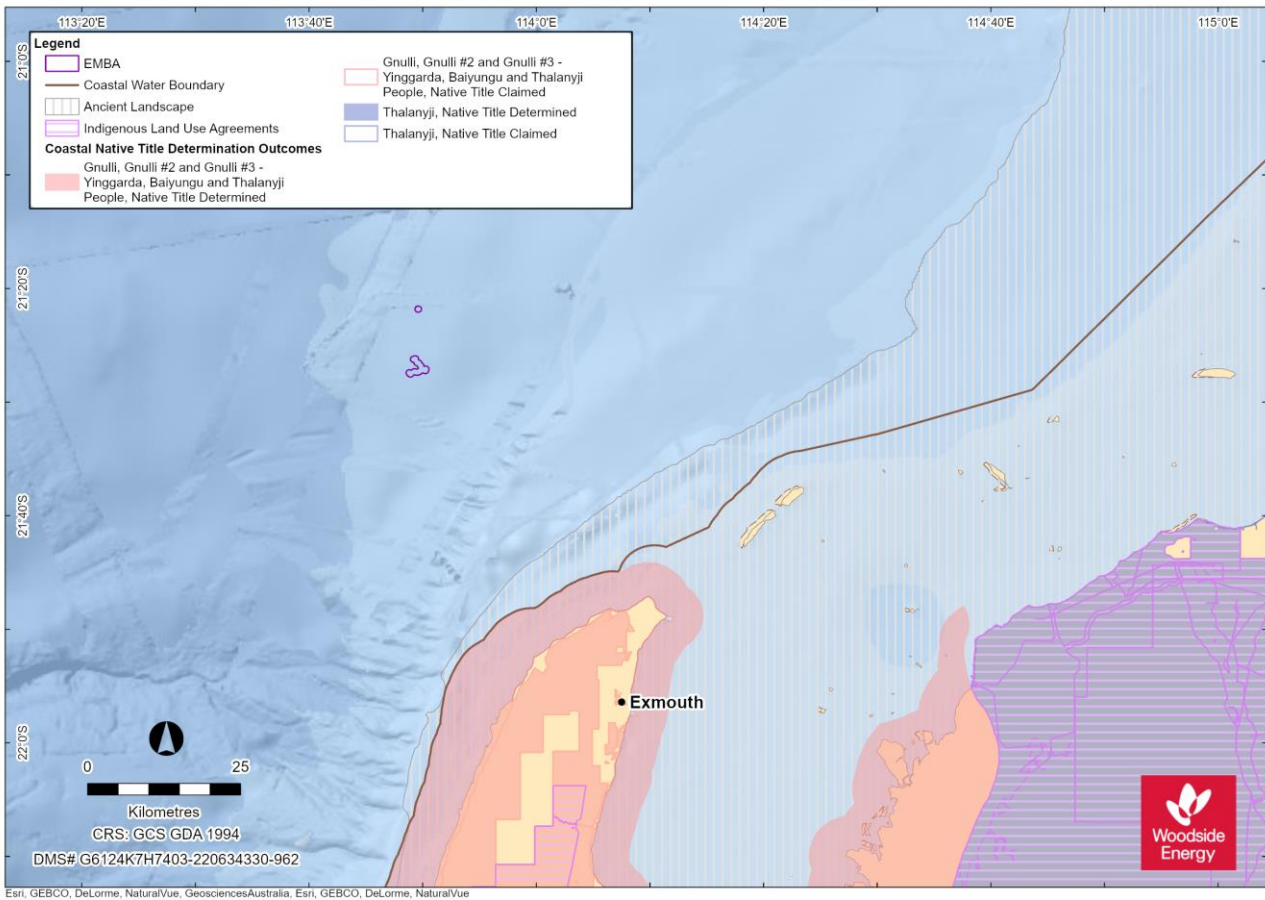


Figure 5-11: The EMBA in relation to native title claims and determinations

Table 5-4: Summary of Native Title Claims, Determinations and ILUAs which overlap or are coastally adjacent to the EMBA.

Claim / Determination / ILUA	Registered Native Title Body Corporate	Overlap with EMBA	Coastally Adjacent to the EMBA
Claim / Determination / ILUA			
Gnulli, Gnulli #2 and Gnulli #3 - Yinggarda, Baiyungu and Thalanyji People	Nganhurra Thanardi Garbu Aboriginal Corporation, Yinggarda Aboriginal Corporation	No	Yes

5.6.1.4 Marine Parks

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

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

The EMBA does not overlap Commonwealth Marine Parks or State Marine Parks.

5.6.1.5 Sea Country Values

Woodside recognises the potential for marine ecosystems to include cultural features as well as environmental values. This is one aspect of the broader concept of “sea country”, which can be defined as the area of sea over which a First Nations group has interests, cultural value, connection and use. It has been noted that “the saltwater peoples of the north-west are associated with discrete clan estates or tribal areas, often referred to in contemporary Aboriginal English as ‘saltwater country’ or ‘sea country’. ‘Country’ refers to more than just a geographical area: it is shorthand for all the values, places, resources, stories and cultural obligations associated with that geographical area.” (Smyth, 2007). It necessarily follows that an impact to marine ecosystems has the potential to impact cultural features where the impact is detectable within Sea Country—the seascape which Traditional Custodians view, interact with or hold knowledge of. The link between environmental protection and cultural heritage protection is illustrated in the Australian Government’s Indigenous Protected Areas Program. The Indigenous Protected Areas program provides for “*areas of land and sea managed by Indigenous groups as protected areas for biodiversity conservation...IPAs deliver environmental benefits...Managing IPAs also helps Indigenous communities protect the cultural values of their country for future generations...*” (DCCEEW, 2023).

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. 20–30 km out to sea, out to the horizon and the limit of human visibility. ... However, in some coastal places, clouds that can be seen well over 100 km out to sea are imbued with spiritual significance. For those groups with elaborate canoe technology, seascapes extend well over the horizon.*” While there is some evidence of traditional watercraft in Australia’s North West, the recorded evidence is limited to travel across inland rivers (e.g., Barber and Jackson, 2011) or travel between coastal islands (Paterson et al., 2019). The process for identifying First Nations groups who may have interests and connection in Sea Country are set out in **Section 6.5**. The scope of advice Traditional Custodians were encouraged to provide through project consultation was not limited by reference to particular boundaries or limits of sea country.

Cultural features of coastal areas may include marine species that may travel many thousands of kilometres through areas with similar cultural values to multiple First Nations language groups. Some species may travel as far as 5,000 km from Antarctica to the Kimberley region of Western Australia (Double et al., 2010, 2012), passing First Nations language groups along the entire west coast of Australia. For further description of turtles and whale distribution and whale migration patterns, see **Section 5.5**.

As set out above, an impact to marine ecosystems has the potential to impact cultural values where the impact is detectable within Sea Country. Woodside considers that impact to cultural values of marine species will be adequately managed in areas of traditional Sea Country, and therefore management of the environmental values will preserve the cultural values of environmental receptors, as assessed in **Section 8.3**.

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

5.6.1.6 Desktop Assessment of Sea Country Values

Cultural Features and Heritage Values Identified in Publicly Available Literature

Publicly available sources were assessed for records of previously identified Sea Country values or cultural features that may overlap with the EMBA. Where cultural features or Sea Country values were identified these are summarised in Table 5-5 according to the First Nations groups (where identified or inferable) who hold these values. Except where specific references are made to cultural values, these are addressed through the management of environmental values and are not summarised in this section.

Table 5-5: Cultural features and heritage values identified in publicly available literature.

First Nations Group	Features and Values	Source	Potential for Overlap with EMBA
Gnulli (Baiyungu, Thalanyji, Yinggarda)	Feature: Resources including marine animals. Value: Traditional knowledge holds that ancestors live on the land and in the water. Therefore, people have obligations to access and care for these places (e.g., keeping them clean).	Peck on behalf of the Gnulli Native Title Claim Group v State of Western Australia [2019] FCA 2090	Possible (unspecified)
	Feature: Resources including mangrove crabs, gastropods, shellfish, dugong, turtle).	Morse 1993	No
	Feature: Places of special significance including mythological and ceremonial sites and natural resources.	YMAC 2019	Possible
	Feature: The spiritual watersnake (<i>wanamangura / kajurra</i>) inhabits permanent waters within the area		Possible
Unspecified	Feature: The ocean can include sacred sites and songlines. Value: People have kin relationships to important animals, plants tides and currents.	Smyth, 2008	Possible (unspecified) Possible (unspecified)
	Feature: Archaeological sites in submerged landscapes.	Bradshaw, 2021	No (beyond ancient coastline)
	Value: Sea Country has customary law defining ownership and management rights and responsibilities.	Muller, 2008	Possible (unspecified)
	Value: Knowledge of Sea Country. Value: Connection to Sea Country. Value: Care for Sea Country. Value: The extent of Sea Country is determined by the travels of dreaming ancestors. This is recorded and conveyed through songlines.	Kearney et al., 2023	Possible (unspecified) Possible (unspecified) Possible (unspecified) Possible (unspecified)

First Nations Group	Features and Values	Source	Potential for Overlap with EMBA
	Feature: Archaeological sites indicate that islands were occupied prior to sea level rise.	DBCA, 2020	No
	Value: Sea Country includes values, places, resources, stories and cultural obligations. Value: Activities relating to resources included: <ul style="list-style-type: none"> • dugong hunting • turtle hunting • turtle egg collecting • seabird egg collecting • spearing fish • reef trapping fish • herding fish • line fishing • collecting fish in stone fish traps • poisoning fish • gathering shellfish and other marine resources. 	Smyth, 2007	Possible (unspecified) Possible for deepwater resources (noting water depth in EMBA is 810-850m)
	Value: People have kinship relationships with every plant and animal. Value: Certain species, including fish and seafood, must not be eaten during initiation rituals due to their sacredness to the creation being Barrimirndi. Breaking this law may lead to cyclones.	Juluwarlu, 2004	Possible (unspecified) No
	Feature: Tangible and intangible heritage. Feature: Archaeological evidence of varied occupation and adaptation. Value: A distinct way of life centred around the use of limited water and coastal resources.	Macfarlane and McConnell, 2017	Possible (unspecified) No (beyond ancient coastline) Possible (unspecified)

5.6.1.7 Indigenous Archaeological Heritage Assessment

Woodside understands that communal cultural connection may exist between Traditional Custodians and land and waters. It is understood from the onshore archaeological record that Aboriginal 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.

It is understood that the sea level has risen significantly during the 65,000 years of Indigenous occupation, and areas that were once inhabited are now submerged on the continental shelf (Veth et al., 2019; UWA, 2021). The Ancient Coastline KEF at 125 m depth contour represents the lowest sea level during Indigenous occupation (O’Leary et al 2020; see also Williams et al 2018; UWA 2021). Archaeological material preserved on the Ancient Landscape has the potential to provide further information about the earliest periods of human occupation (Veth et al., 2019; UWA, 2021).

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

In recognition of this, Woodside considers the Ancient Landscape between the mainland and the Ancient Coastline KEF as an area where potential Indigenous archaeological material may exist on the seabed, as this covers the full extent of this possible Indigenous occupation. There is no overlap of EMBA with the Ancient Landscape and no potential for seabed disturbance from planned activities and therefore no potential for impacts to archaeological material.

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

For this EP, a search of DPLH’s Aboriginal Heritage Inquiry System was undertaken, which showed no registered Aboriginal sites in the EMBA.

No archaeological sites within the EMBA were identified by Traditional Custodians during the course of preparing the EP (Appendix F).

5.6.1.8 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 2021). 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 (**Appendix F**).

During consultation on another Woodside activity, NTGAC raised an interest in whale sharks and marine parks.

During consultation, Yinggarda expressed sadness at the potential for environmental impact, concern about the potential impacts to patterns of whale migrations and potential for collisions with whales. Yinggarda expressed a general interest in whales.

Some persons or organisations who identified as a relevant person in relation to First Nations cultural heritage in other Woodside EPs, have indicated knowledge of cultural features or heritage values potentially affected by the activities described in this EP.

For completeness in describing the Existing Environment this feedback on potential cultural features and heritage values is identified below:

- whales (including migration patterns)

- whale sharks
- turtles
- dugongs
- plankton
- seagrass
- energy lines (unspecified)
- songlines and dreaming (unspecified)
- where saltwater and freshwater meet.

5.6.1.9 Intangible Cultural Features

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

Beyond references to unspecified songlines and energy lines in relation to activities subject to other EPs, no intangible cultural heritage has been identified as potentially overlapping the project area. For completeness, however, it is recognised that common categories of intangible cultural heritage in Australia include:

- Songlines: Oral Songlines are often described by Aboriginal people as the law of the land and make up part of the Dreaming (Neale and Kelly, 2020). Songlines are viewed in Western academia as a framework for relating people to land and consist of a series of invisible, interconnected routes along the landscape that mark significant sites for Aboriginal people (Higgins, 2021). Songlines demonstrate Aboriginal peoples' strong connections to land by revealing sacred knowledge that is place-specific (Roberts, 2023). The land's physical features are instrumental in maintaining songlines because this is how ancestral spirits journeyed through, and interacted with, the physical landscape leaving sacred knowledge behind. The interconnection between the physical and spiritual is where songlines become intrinsically tied to significant places across Country. As a result, geographical landforms are recorded within songlines and become sacred places. Such landforms can include inter alia: rocks, mountains, rivers, caves and hills (Higgins, 2021). Songlines can become lost, fragmented or broken when there is a loss of Country or forced removal from Country (Neale and Kelly, 2020). Physical sites that have been identified as comprising a component of a songline are important to protect in order to prevent the fragmenting or breaking apart of songlines and loss of sacred cultural knowledge. While no specific details of songlines have been provided by relevant persons during consultation for this Activity, it can be confirmed that no landforms typical of songlines have been identified or are anticipated to be impacted by the Activity.

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

- 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. Caring for Country may include, but is not limited to, maintenance of the physical

environment and ecosystem. It may also have cultural, spiritual and ritual dimensions such as caring for ancestral beings or ensuring cultural safety.

- Knowledge of Country/customary law and transfer of knowledge: Knowledge of and familiarity with the features of Sea Country is itself a value. The inherent potential for restricted or secret knowledge makes this difficult to assess even through consultation with Traditional Custodians. However, aspects such as limitations on access to sites or disruption/relocation of First Nations communities may have implications for the preservation of First Nations knowledge. Further, connection to Country may be damaged where people are displaced or disrupted (e.g., during colonisation) or where there is a loss of technical skills or environmental knowledge. 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: Describes the multi-faceted relationship between First nations people and the landscape, which is envisioned as having personhood and spirit. It is also an aspect of personal identity for many First Nations people.
- Access to Country, including Sea Country: Is necessary for the continuation of other values including caring for Country and the transfer of traditional knowledge. Being on Country can be an important way of expressing or maintaining connection to Country. Access is also a value in its own right, as a continuation of traditional Sea Country access and use.
- Resource collection: In addition to their immediate value as sustenance, the gathering and preparation of resources is informed by cultural knowledge, and an inability to use these resources may result in a loss of ability to transfer that knowledge to future generations.

5.6.1.10 Historic Sites of Significance

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

5.6.1.11 Underwater Heritage

A search of the Australasian Underwater Cultural Heritage Database, which records all known Maritime Cultural Heritage (shipwrecks, aircraft, relics, and other underwater cultural heritage) in Australian waters does not contain records with the EMBA. The closest Underwater Cultural Heritage site is the wreck of the Lady Ann, a sailing vessel wrecked in 1982 approximately 40 km east of the EMBA.

5.6.1.12 World, National and Commonwealth Heritage Listed Places

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

5.6.2 Commercial Fisheries

To understand whether there is potential for interactions between these fisheries and the petroleum activity Woodside have undertaken an assessment using FishCube and ABARES data for fisheries overlapping the EMBA⁶, as well as ROV inspection footage in the Stybarrow field. A summary of the commercial fisheries overlapping the EMBA, and Woodside's assessment of the likelihood of interaction, is provided in **Table 5-6**.

A number of Commonwealth and State fishery management areas overlap the EMBA. **Table 5-6** identifies the Commonwealth and State commercial fisheries overlapping the EMBA and provides an assessment of the potential interaction based on the nature of the fishery and historic catch data.

⁶ <https://www.wafic.org.au/what-we-do/access-sustainability/oil-gas/consultation-approach-for-unplanned-events/>

Table 5-6: Commonwealth and state managed fisheries within the EMBA

Fishery Name	Potential Interaction?	Description ¹
Commonwealth Fisheries		
Western Deep Water Trawl Fishery	Yes	The Western Deepwater Trawl Fishery operates in Commonwealth waters off the coast of Western Australia. Effort in recent years has been localised in the area offshore and slightly south of Shark Bay. Catch in the 2020–21 season was 5 t in total, down from 31 t in 2019/2020. Whilst the EMBA overlaps with the fishery management area, there is very little potential for interaction given the current distribution of target species and fishing effort.
Western Tuna and Billfish Fishery	No	Fishing effort has concentrated off Shark Bay and south-west Western Australia, with occasional activity off South Australia. Whilst the EMBA overlaps the fishery management area, there is no potential for interaction given the current distribution of fishing effort.
Southern Bluefin Tuna Fishery	No	Fishing effort has concentrated off southern and eastern Australia. Whilst the EMBA overlaps the fishery management area, there is no potential for interaction given the current distribution of fishing effort.
Skipjack Tuna Fishery	No	There has been no fishing in the area since 2008–09. Whilst the EMBA overlaps with the fishery management area, there is no potential for interaction given the current distribution of fishing effort.
State Fisheries		
Pilbara Crab Fishery	No	Blue swimmer crabs are targeted by the Pilbara Crab Managed Fishery using hourglass traps, primarily within inshore waters around Nickol Bay and Dampier. Water depths in the EMBA too deep to support the target species and the fishery is not active in the EMBA.
Pilbara Line Fishery	No	The Pilbara Line Fishery encompasses all of the 'Pilbara waters', extending from a line commencing at the intersection of 21°56'S latitude and the boundary of the Australian Fishing Zone and north to longitude 120°E. There are no stated depth limits of the fishery. The fishing vessels primarily target demersal Lutjanid species such as goldband snapper, which typically occur in < 200 m water depth. Given the depth preferences of target species, no fishing in this fishery will occur in the EMBA.
West Coast Deep Sea Crustacean	No	The West Coast Deep Sea Crustacean Fishery is a 'pot' fishery using baited pots operated in a long-line formation in the shelf edge waters (> 150 m) of the West Coast and Gascoyne Bioregions. The fishery primarily targets crystal crabs. Water depths in the EMBA are not conducive for this fishery.

Fishery Name	Potential Interaction?	Description ¹
Mackerel Fishery	No	The Mackerel Managed Fishery targets Spanish mackerel (<i>Scomberomorus commerson</i>) using near-surface trawling gear from small vessels in coastal areas around reefs, shoals and headlands. The commercial fishery extends from Geraldton to the Northern Territory border. No interaction is expected given the gear type, habitat preference for target species (pelagic) and known fishing effort.
Marine Aquarium	No	The Marine Aquarium Managed Fishery operates within Western Australian waters. The fishery is primarily a dive-based fishery that uses hand-held nets to capture the desired target species and is restricted to safe diving depths (typically < 30 m). The fishery is typically active from Esperance to Broome, with popular areas including the coastal waters of the Cape Leeuwin/Cape Naturaliste region, Dampier and Exmouth. Water depths in the EMBA are not conducive for this fishery.
South West Coast Salmon	No	The commercial salmon fishery uses beach seine net to catch fish. There are two commercial salmon fisheries operating in Western Australia: the South Coast Salmon Managed Fishery (18 licences) and South West Coast Salmon Managed Fishery (six licences). The target species is restricted to temperate waters and will not occur in the Gascoyne or Pilbara.

¹ Fisheries descriptions derived from *Fishery Status Reports 2022* (Patterson et al., 2022) and *Status Reports of the Fisheries and Aquatic Resources of Western Australia 2021/2022 - State of the Fisheries* (Newman et al., 2023) unless cited otherwise.

5.6.3 Traditional Fisheries

There are not expected to be traditional fisheries that operate within the EMBA.

5.6.4 Tourism and Recreation

While relatively close to the Ningaloo Coast, which supports extensive nature-based tourism, the EMBA is in deep water (approximately 800 m) with no significant natural attractions and is a considerable distance from the nearest boat-launching facilities. Given the depth of the EMBA and distance from shore, significant recreational fishing and tourism are not expected. **Appendix D** provides detail on recreational fishing and tourism in the region.

5.6.5 Oil and Gas Activities

The NWS is Australia's most prolific oil and gas production area, largely responsible for WA accounting for 66% of the country's oil production, 76% of the country's condensate production and 37% of the country's gas production in 2013 (Australian Petroleum Production and Exploration Association, 2014).

Oil and gas production facilities close to the EMBA include:

- Woodside's Ngujima-Yin FPSO (approximately 17 km east of the EMBA)
- Santos' Ningaloo Vision FPSO (approximately 20 km east of the EMBA), and
- Woodside's Pyrenees Venture FPSO (approximately 22 km east-south-east of the EMBA).

Woodside's Laverda field within title WA-59-L, directly to the south of WA-32-L and is produced back to the Ngujima-Yin FPSO. The subsea equipment associated with the Laverda production is approximately 6 km from the EMBA at the closest point.

5.6.6 Commercial Shipping

The EMBA hosts very low levels of commercial shipping. A fairway designed by AMSA lies to the west and north of the EMBA, approximately 27 km from the EMBA at the closest point. Commercial shipping is concentrated within this fairway (**Figure 5-12**). The production facilities to the east of the EMBA will intermittently host tankers for offtakes, however all these facilities lie well beyond the EMBA.

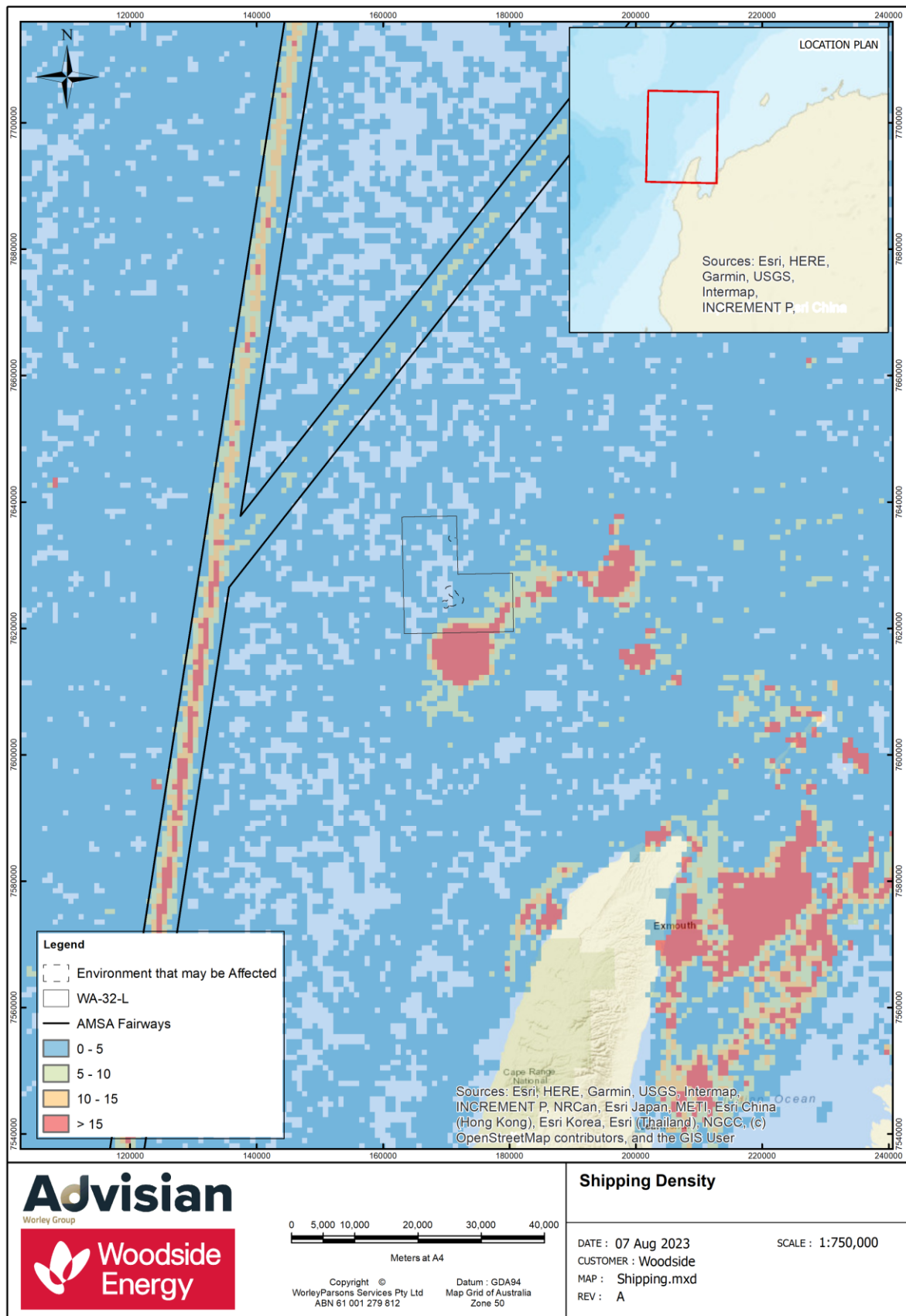


Figure 5-12: Commercial shipping traffic in the vicinity of the EMBA

5.6.7 Defence

No defence areas or infrastructure intersects the EMBA. The EMBA is within the North Western Training Area and military restricted airspace (R8541A) a designated defence exercise area which encompasses waters and airspace off the North West Cape. When activated by a Notice to Airmen (NOTAM), the restricted airspace can operate down to sea level.

6 Consultation

6.1 Summary

Woodside consults relevant persons in the course of preparing an EP in accordance with regulation 25 of the Environment Regulations. Woodside acknowledges that consultation is designed to ensure that relevant persons are identified and given sufficient information and a reasonable period to allow them to make an informed assessment of the possible consequences of the proposed activity on them and, to ensure that titleholders can consider and adopt appropriate measures in response to the matters raised by relevant persons. Consistent with regulation 4 of the Environment Regulations, consultation also supports Woodside's objective to ensure that the environmental impacts and risks of the activity are reduced to ALARP and an acceptable level.

Woodside acknowledges that a titleholder's approach to consultation must be informed by both the Environment Regulations and the findings of the Full Federal Court in the *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193 (Tipakalippa Appeal) (see **Section 6.2** and **6.5.1**) delivered on 2 December 2022.

For the petroleum activities covered by this EP, Woodside has considered the EMBA in undertaking consultation (see further discussion in **Section 6.2**). The broadest extent of the EMBA has been determined by reference to the highly unlikely event of a hydrocarbon release resulting during the petroleum activities (see **Section 5**).

Woodside's consultation methodology is divided into three parts:

- The first part (**Sections 6.2 to 6.7**) provides an overview of Woodside's consultation methodology for its EPs, including how we apply regulation 25(1) of the Environment Regulations to identify relevant persons.
- The second part (**Section 6.8**) explains Woodside's application of the consultation methodology and Woodside's assessment of relevant persons for this EP.
- The third part (**Section 6.9**) details the:
 - opportunities provided to persons or organisations to be aware of Woodside's proposed EP and participate in consultation, including individual Traditional Custodians.
 - consultation information provided to relevant persons, feedback received and Woodside's assessment of the merits of each objection or claim.
 - Engagement with persons or organisations that Woodside chose to contact who are not relevant persons for the purposes of regulation 25(1) of the Environment Regulations (see **Section 6.3.4**).

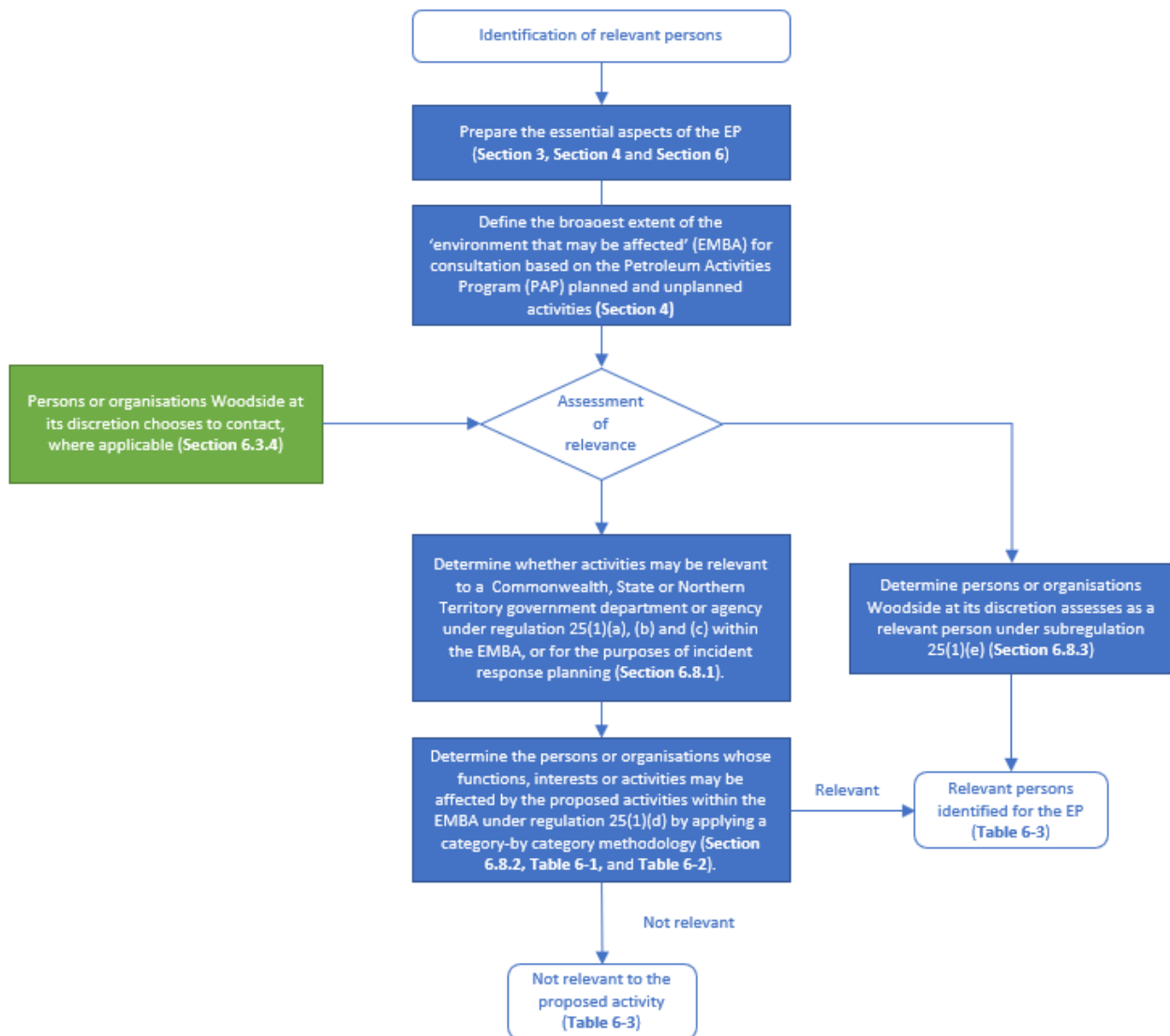


Figure 6-1: Overview of Woodside’s methodology to identify relevant persons.

6.2 Consultation – General Context

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

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

Woodside acknowledges NOPSEMA's Guideline on *Consultation in the course of preparing an environment plan* (12 May 2023) as well as judicial guidance in the Tipakalippa Appeal on the intent of consultation as follows:

- At paragraph 54 of the appeal decision: "... provide a basis for NOPSEMA's considerations of the measures, if any, that a titleholder proposes to take or has taken to lessen or avoid the deleterious effect of its proposed activity on the environment, as expansively defined."
- At paragraph 89 of the appeal decision: "...its purpose is to ensure that the titleholder has ascertained, understood and addressed all the environmental impacts and risks that might arise from its proposed activity. Consultation facilitates this outcome because it gives the titleholder an opportunity to receive information that it might not otherwise have received from others affected by its proposed activity. Consultation enables the titleholder to better understand how others with an objective stake in the environment in which it proposes to pursue the activity perceive those environmental impacts and risks. As the Regulations expressly contemplate, it enables the titleholder to refine or change the measures it proposes to address those impacts and risks by taking into account the information acquired through the consultations. Objectively, the scheme intends that this is likely to improve the minimisation of environmental impacts and risks from the activity."

The Tipakalippa Appeal has also been further considered in the context of specific methods for consultation with First Nations relevant persons (**Section 6.5.1**).

In order to undertake consultation, Woodside has developed a methodology for identifying relevant persons, in accordance with regulation 25(1) of the Environment Regulations (**Section 6.3**). This methodology is consistent with NOPSEMA's guideline and demonstrates that, in order to meet the requirements of regulation 34 (criteria for EP acceptance) when preparing the EP, Woodside understands the geographical extent to which the environment may be affected (EMBA) by risks and impacts from our activities (see **Sections 5 and 8**).

Woodside has undertaken consultation in the course of preparing this EP in compliance with regulation 25 of the Environment Regulations, which requires a titleholder to:

- consult with each of the following (a **relevant person**) in the course of preparing an EP:
 - each Commonwealth, State or Northern Territory agency or authority to which the activities to be carried out under the environment plan may be relevant.
 - If the plan relates to activities in the offshore area of a State -the Department of the responsible State Minister.
 - 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 (regulations 25(1) and 25(2))
- allow a relevant person a reasonable period for the consultation (regulations 25(1) and 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 (regulations 25(1) and 25(4)).

Further, Woodside seeks to carry out consultation in a manner that:

- is consistent with the principles of ecologically sustainable development (ESD) set out in section 3A of the EPBC Act – see **Section 2.2.2**
- is intended to reduce the environmental impacts and risks from the activity to ALARP.
- seeks to ensure that the environmental impacts and risks of the activity will be of an acceptable level.

- 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 6.7** and **Section 10.5**).

An overview of Woodside's consultation approach is outlined in **Figure 6-2**.

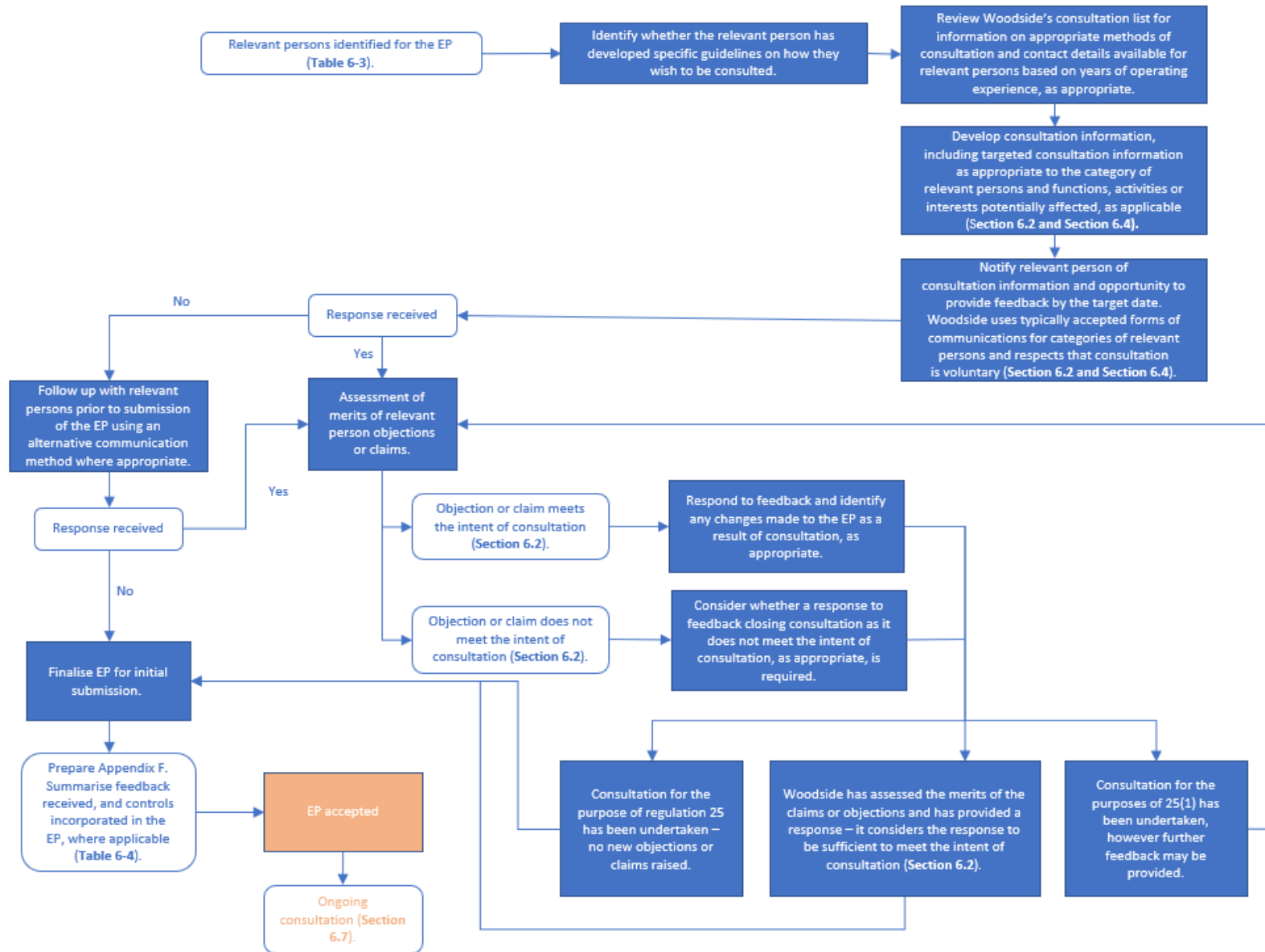


Figure 6-2: Overview of Woodside’s consultation approach.

The methodology for consultation for this activity has been informed by various guidelines and relevant information for consultation on planned activities, including:

- Federal Court:
 - [Santos NA Barossa Pty Ltd v Tipakalippa \[2022\] FCAFC 193](#)
 - [Munkara v Santos NA Barossa Pty Ltd \(No 3\) \[2024\] FCA9](#)
- NOPSEMA:
 - [GL2086 – Consultation in the course of preparing an environment plan – May 2023.](#)
 - [GN1847 - Responding to public comment on environment plans - – January 2024](#)
 - [GN1344 - Environment plan content requirements - September 2020](#)
 - [GL1721 - Environment Plan Decision Making Guideline - – January 2024](#)
 - [GN1488 - Oil pollution risk management - July 2021](#)
 - [GN1785 – Petroleum activities and Australian Marine Parks – June 2020](#)
 - [GL1887 – Consultation with Commonwealth agencies with responsibilities in the marine area – January 2024](#)
 - [Consultation on offshore petroleum environment plans – Information for the community](#)
- Department of Climate Change, Energy, the Environment and Water:
 - [Sea Countries of the North-West; Literature review on Indigenous connection to and uses of the North West Marine Region](#)
- Australian Fisheries Management Authority:
 - [Petroleum industry consultation with the commercial fishing industry](#)
- Commonwealth Department of Agriculture and Water Resources:
 - [Fisheries and the Environment – Offshore Petroleum and Greenhouse Gas Act 2006](#)
 - [Offshore Installations Biosecurity Guide](#)
- WA Department of Primary Industries and Regional Development:
 - [Guidance statement for oil and gas industry consultation with the Department of Fisheries](#)
- WA Department of Transport:
 - [Offshore Petroleum Industry Guidance Note](#)
- Good practice consultation:
 - [IAP2 Public Participation Spectrum](#)
 - [Interim Engaging with First Nations People and Communities on Assessments and Approvals under the Environment Protection and Biodiversity Act 1999](#)

6.3 Identification of Relevant Persons for Consultation

6.3.1 Regulations 25(1)(a), (b) and (c)

The relevant inquiry for determining relevant persons within the description of regulations 25(1)(a) and (b) is whether the activities to be carried out under the EP may be relevant to one of the government departments or agencies relevant to this EP in those regulations. The government departments and agencies relevant to this EP are listed in **Table 6-3** below. In accordance with regulation 25(1)(b), Woodside consults with the department of the relevant State Minister.

6.3.2 Regulation 25(1)(d)

In order to identify a relevant person for the purposes of regulation 25(1)(d), the meaning of “*functions, interests or activities*” needs to be understood. In regulation 25(1)(d), the phrase “*functions, interests or activities*” should be construed broadly and consistently with the objects of the Environment Regulations (Regulation 4) and the objects of the EPBC Act (section 3A).

In developing its methodology for consultation, Woodside acknowledges that the guidance on the definition of functions, interests and activities is as follows in accordance with NOPSEMA’s *GL2086 – Consultation in the course of preparing an environment plan* guideline (May 2023):

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

As discussed in **Sections 6.6.1** and **6.6.2**, Woodside’s methodology for determining ‘relevant persons’ for the purpose of regulation 25(1)(d) of the Environment Regulations includes consideration of:

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

6.3.3 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).

6.3.4 Persons or Organisations Woodside Chooses to Contact

In addition to undertaking consultation with relevant persons under regulation 25(1) there are persons or organisations that Woodside chooses to contact from time to time, in relation to a proposed activity. For example, these are persons or organisations:

- that are ‘not relevant’ pursuant to regulation 25(1) but that Woodside has chosen to seek additional guidance from, for example, to inform the correct contact person that Woodside should consult, or engage with
- that are ‘not relevant’ pursuant to regulation 25(1) but have been contacted as a result of consultation requirements changing or updated guidance from the Regulator.
- where it is unclear what their functions, interests or activities are, or whether their functions, interests or activities may be affected. In this circumstance, engagement is required to inform relevance under Woodside’s methodology. Woodside follows the same methodology for assessing a person or organisations relevance as it does during its initial assessment (as described in **Figure 6-1** and **Section 6.8**). The result of Woodside’s assessment of relevance during the development of the EP is outlined at **Table 6-2**.

Engagement undertaken with persons or organisations Woodside assessed as not relevant but chose to contact are summarised at **Appendix F, Table 2**.

6.4 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 6.2**, Woodside notifies relevant persons, of the proposed activities, respecting that consultation is voluntary (for the relevant person) and collaborates on a consultation approach where further engagement is sought by the relevant person. Woodside understands that the consultation process should be appropriate for the category of relevant persons and that not all persons or organisations will require the same level of engagement. Woodside recognises that the level of engagement is dependent on the nature and scale of the petroleum activities. Woodside recognises published guidance for good practice consultation relevant to different sectors and disciplines (see **Section 6.2**). 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.

6.4.1 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 or Petroleum Activity Area depending on the EP, where the activity will take place, the timing and duration of the activity, a location map and description of the EMBA, relevant exclusion zones as well as a summary of relevant risks and mitigation and/or management control measures relevant to the proposed petroleum activity. It also sets out contact details to provide feedback to Woodside.

Woodside recognises that the level of information necessary to assist a person or organisation to understand the impacts of the proposed activity on their functions, interests or activities may vary and, also may depend on the degree to which a relevant person is affected. For example, Woodside considers that relevant persons who may be impacted by planned activities, for example as a result of temporary displacement due to exclusion zones, may require more targeted information relevant to their functions, interests or activities. Woodside also acknowledges NOPSEMA's brochure entitled *Consultation on offshore petroleum environment plans information for the community*, which advises consultees that they may inform titleholders that they only want to be consulted in the very unlikely event of an oil spill.

Woodside places advertisements in a selected local, state and national newspaper. This typically includes the name of the EP Woodside is seeking feedback on, an overview of the activity, the consultation feedback date and the ways in which a person or organisation can provide feedback. Advertising in the local paper in the area of the activity is also consistent with the public notification process under section 66 of the *Native Title Act* for native title applications. Woodside typically aligns advertisement feedback timeframes with the timing described below. Feedback received is assessed in accordance with **Section 6.8** 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
- Summary Consultation Information Sheet, presentations or summaries specific to a particular relevant person group
- Subscription available on Woodside's website to receive notification of new Consultation Information Sheets for Woodside EPs
- Emails
- Letters
- Phone calls
- Face-to-face meetings (virtual or in person) with presentation slides or handouts as appropriate
- Maps outlining a persons or organisations defined area of responsibility in relation to the proposed activity, for example a fisheries management area or defence training area.
- Community meetings, as appropriate.

Woodside recognises 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 persons understand how their input has been considered in the development of the EP.

Woodside communicates with relevant persons in different ways. Woodside recognises that as part of genuine two-way dialogue, these forms of communication may evolve, including for example due to changes to organisation representation, as relationships are further established, or an alternative form of communication is expressed by a person or organisation. Woodside acknowledges that there might be limitations in how it can consult with relevant persons.

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

Category of Relevant Person	Typically Accepted Form of Communication
Government departments / agencies – marine	Woodside applies NOPSEMA’s guideline for engagement with Commonwealth government departments or agencies in line with <i>GL1887 – Consultation with Commonwealth agencies with responsibilities in the marine area – January 2023</i> by using email for its consultation unless another form of communication is requested.
Government departments / agencies – environment	
Government departments / agencies – industry	Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used where requested.
Commercial fisheries and peak representative bodies	Commonwealth commercial fisheries: Email is used as the primary form of communication with Commonwealth commercial fisheries in the ordinary course of business. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used where requested.
Recreational marine users and peak representative bodies	<p>State commercial fisheries and recreational marine users: The Western Australian Department of Primary Industries and Regional Development (DPIRD) has responsibility for managing the 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 where requested.</p> <p>Peak representative bodies: Email is used as the primary form of communication with commercial fishery and recreational marine user peak representative bodies in the ordinary course of business. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used where requested.</p>
Titleholders and Operators	Email is used as the primary form of communication between titleholders and operators in the ordinary course of business. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used where requested.
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 where requested.
Traditional Custodians and nominated representative corporations	There are many forms of communication that Woodside uses on a case-by-case basis and as appropriate to or requested by the specific group, such as email, phone calls, meetings and community forums. Other forms of communication are used where requested.
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 where requested.

Category of Relevant Person	Typically Accepted Form of Communication
Historical heritage groups or organisations	NOPSEMA's guideline (GL1887 – Consultation with Commonwealth agencies with responsibilities in the marine area – January 2023) for engagement with government departments or agencies is used as a reference for Woodside's approach for communicating with historical heritage groups or organisations. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used where requested.
Local government and recognised local community reference/liaison groups or organisations	Local government: NOPSEMA's guideline (<i>GL1887 – Consultation with Commonwealth agencies with responsibilities in the marine area – January 2023</i>) 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 is used as the primary form of communication with local community reference/liaison groups or organisations in the ordinary course of business. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used where requested.
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 where requested.
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 where requested.

Information which is provided to relevant persons for the purposes of consultation on this EP is summarised at **Appendix F, Table 1**.

Appendix F, Table 2 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 (see **Section 6.3.4**).

When engaging in consultation, Woodside notifies relevant persons that, in accordance with regulation 25(4), the relevant person may request that particular information the person or organisation provides in the consultation not be published and that information subject to that request will not be published.

6.4.2 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 two-way engagement may be demonstrated via engagement on incorporation of controls, where applicable, being provided to the relevant person so that the relevant person understands how their input has been considered in the development of the EP.

Woodside considers its methodology allows relevant persons a reasonable period for the consultation (regulation 25(3)). A reasonable period for all relevant persons, including Traditional Custodian relevant persons, to participate in consultation for this EP has been provided.

The consultation period under this EP has satisfied benchmark periods under other relevant legislative processes:

- Regulation 30 of the Environment Regulations sets out a public consultation period of 30 days.

- The Department of Mines and Petroleum “Guidelines for Consultation with Indigenous People by Mineral Explorers” directs a period of 21- 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...”⁷

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 enable 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 (see **Section 6.3.4**) 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 1 and Table 2 sets out a history of consultation and demonstrates that a reasonable period of consultation has been afforded for each relevant person.

Woodside considers that the “reasonable period” of consultation for this EP has been provided and the consultation under Regulation 25 is complete.

As detailed in **Section 6.7** if comments and feedback are received after the EP has been submitted, Woodside will consider those comments and update controls as appropriate, at all stages during the life of the EP, as per Woodside’s ongoing consultation approach.

6.4.3 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 6.5.1**).⁸ Consultation is a “real world activity” and must be capable of reasonable discharge.⁹ 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.¹⁰

When the titleholder demonstrates that it has provided sufficient information and a reasonable period for consultation, the Regulation 25 consultation requirements are met.¹¹ Meeting these obligations require evaluative judgment to determine reasonable satisfaction of the consultation obligation and, as such, the Regulator uses its discretion to determine if these criteria are met. The nature of the person being consulted,

⁷ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [136].

⁸ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 [89], [98], [103]-[104] and [109].

⁹ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at [89].

¹⁰ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at [96] and [103].

¹¹ Explanatory Statement, Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023, page 29.

and their function, interest and activity that may be affected, will inform the manner of consultation and the reasonable period to be afforded.¹²

The titleholder is not required to obtain consent from a consultee to engage in the activity or confirmation from a consultee that consultation is complete. A titleholder is required to provide an opportunity to consult.

The Federal Court has commented that a “reasonable opportunity” for consultation must be afforded to relevant persons.¹³ A reasonable opportunity may not be every opportunity requested and is limited to reasonable opportunities to consult.

Woodside has completed reasonable steps to discharge its consultation obligations. Woodside has provided sufficient information and a reasonable period of time to enable relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities, and sufficient time to provide relevant feedback for Woodside to assess relevant persons' objections or claims and action the assessment and response. Woodside has also provided a reasonable opportunity for there to be genuine two-way dialogue on environmental impacts and concerns.

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

Appendix F, Table 1 and Table 2 of this EP sets out the history of consultation under Regulation 25. To the extent a relevant person says that it has further information to share or claims that consultation under Regulation 25 has not completed, **Appendix F, Table 1 and Table 2** provide reasons specifically why Woodside considers consultation under Regulation 25 has been met in relation to that relevant person.

6.5 Context of Consultation Approach with First Nations

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.

6.5.1 Approach to Methodology – Woodside’s Interpretation of Tipakalippa

Woodside has implemented a consultation methodology consistent with regulation 25 and guidance provided in the Tipakalippa Appeal (**Section 6.2**). 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 6.5.2.1 to 6.5.2.4**).

Woodside notes that the Full Federal Court discussed several *Native Title Act 1993* (Cth) (**NTA**) cases in response to a submission made in that case that a requirement under regulation 25 to consult “*each and every*” relevant person would be “*unworkable*”. The reference to native title cases dealt with how decision-making processes under the NTA requiring “all” members of a group to be contacted for communal approval are interpreted by courts in a “reasonable”, “pragmatic” and “not so literal” way.¹⁴ 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.”¹⁵

¹² 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].

¹³ 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].

¹⁴ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [95], [98], [103]-[104] and [109].

¹⁵ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [98].

*“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”¹⁶ (emphasis added).*

“there is no definition of what constitutes “consultation for the purpose of ref 11A [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”¹⁷ (emphasis added).

The judgement in the Tipakalippa Appeal makes clear that a Titleholder will have some decisional choice in identifying which natural person(s) are to be approached, how the information will be given to allow the "relevant person" to assess the possible consequence of the proposed activities on their functions, interests or activities, and how the requisite consultation is undertaken.¹⁸ Woodside takes this to mean that consultation is not fixed to a rigid process, and indeed, will need to be adapted so that it is informed by the relevant person or group. Woodside has met its Regulation 25 requirements through its consultation methodology (**Section 6.2**).

Consistent with the Tipakalippa Appeal, Woodside considers NTA-style “full group” meetings are not the only way for there to be compliance with regulation 25 in relation to Traditional Custodian relevant persons. Nominated representative corporations (such as Prescribed Bodies Corporates (PBCs) established under the NTA) have a designated role of representing the views of their member Traditional Custodians. They have established methods for engaging with their own members. Woodside will not undermine the purpose and authority of nominated representative corporations by requiring full group meetings where the nominated representative corporations have not requested engagement of members via full group meetings. We do not consider it appropriate for titleholders to direct or challenge the nominated representative corporations on how to engage with their members.

Woodside's approach described below demonstrates that sufficient information and a reasonable opportunity is provided to individual Traditional Custodians to provide feedback on Woodside activities, beyond the opportunity provided to nominated representative corporations.

6.5.2 Consultation Method

Woodside's First Nations team has experience in engaging and working with First Nations organisations and individuals, including having worked within the Commonwealth native title and cultural heritage systems and state and territory cultural heritage and land rights systems, for several decades. The team understands the complexities of making information accessible to groups and individuals and engaging in accordance with First Nations groups' established channels of communication and methods of consultation. The First Nations team exercises its professional judgement and is deeply respectful of long-standing relationships (where in place) when considering consultation with First Nations groups. The First Nations team's approach is also informed by the established systems of recognition for First Nations groups and their nominated representative corporations within particular jurisdictions.

For example, the methodology for engaging with First Nations groups in the Northern Territory (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 First Nations groups and their nominated representative corporations in Western Australia falls under the *Native Title Act 1993* (Cth) because the vast majority of the Western Australian coastline is settled under the native title regime. This means that the methodology and process for consultation in Western Australia places greater emphasis on, but is not limited to, Native Title Representative Bodies and PBCs. Native title determinations provide certainty about the appropriate Traditional Custodian groups that have the cultural authority to speak for country adjacent to the EMBA, and also help Woodside to identify Traditional Custodian persons and groups asserting Traditional Custodianship. The judgement in the Tipakalippa Appeal endorses methods of consultation with groups of relevant persons that are appropriate and adapted to the characteristics of groups.¹⁹ Woodside's consultation methodology is adapted and appropriate to the recognised systems of communal interests in Western Australia.

¹⁶ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [96].

¹⁷ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [104].

¹⁸ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [47] and [48].

¹⁹ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [95],[104],[153].

In Western Australia (relevant for this EP), Woodside has sought to follow the established, effective and respectful means of communication used by Native Title Representative Bodies and nominated representative corporations (including PBCs) with their respective First Nations communities. Woodside follows these processes for the appropriate broad capture of individuals' awareness of our activities, to self-identify (**Section 66.5.2.2**), and to provide feedback to inform the management of environmental impacts and risks.

Using these tools, Woodside communicates information about EPs by:

- advertising in relevant newspapers. This encourages self-identification, by advertising proposed activities widely through newspapers that have national and intra-state circulation, i.e., Koori Mail, National Indigenous Times, The West Australian.
- creating carefully considered Consultation Summary Sheets with information developed by an Indigenous member of the First Nations Team to remove jargon and provide relevant information for people to have informed understandings about the activities.
- direct contact through nominated representative corporations.
- utilising social media (i.e., Facebook/Instagram), texts and emails. These mediums are the preferred communication methods used by Traditional Custodians throughout Western Australia and on that basis used by Native Title Representative Bodies and other government agencies and industry, to engage with Traditional Custodians or call meetings. First Nations woman, Professor Bronwyn Castle through 10 years of research found "...social media is an intrinsic part of daily life. The use of Facebook is around 20 per cent higher [among First Nations people] than the national average across all geographical locations" (Carlson and Frazer, 2018).
- for ongoing consultation post Regulation 25, Woodside introduced a Program of Ongoing Engagement with Traditional Custodians which sets out Woodside's commitment to ongoing engagement and support to care for and manage country, including Sea Country. The program was developed in response to Traditional Custodian feedback.
- Woodside has members of its First Nations team who are based in Karratha and Roebourne who serve as on-Country points of contact for First Nations organisations and individuals. These team members have broad local knowledge and established, on-the-ground relationships within communities. This helps contribute to positive outcomes including encouraging First Nations attendance and involvement at Woodside's information sessions and Community roadshows. Team members on the ground engage in a great deal of preparatory work including by distributing information and providing notice to the community to support First Nations attendance at information sessions and Community roadshows.
- From the commencement of engagement with Traditional Custodians, Woodside seeks direction on how they prefer to be consulted and has consulted accordingly. Consultation processes that are informed by Traditional Custodians and co-designed on a case-by-case basis and includes their direction as to cultural protocols, structure of consultation and whom to appropriately consult with (such as Elders).
- Woodside holds meetings on country at a place and time agreed with the Traditional Custodians and offering and providing financial assistance for meeting expenses (as appropriate).
- Woodside provides 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.

6.5.2.1 Identification of Relevant Persons

In order to undertake consultation, Woodside has developed a methodology for identifying all relevant persons, in accordance with regulation 25(1) of the Environment Regulations (**Section 6.2** and **6.3**).

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

Woodside asks nominated representative corporations (such as PBCs) and Native Title Representative Bodies to identify individuals that should be consulted, and enables individuals to self-identify in response to national

and local advertising, social media and community engagement opportunities (**Section 6.5.2.2** and **6.9.2**). Where there is a nominated representative corporation for an area, unless directed by the nominated representative corporation, Woodside does not directly approach individuals for consultation, because this has the potential to undermine the role of the nominated representative corporations. Approaching individuals directly is a practice that is no longer considered acceptable because of divisions it has been shown to cause in communities. In addition to asking for the identification of individuals, Woodside also asks nominated representative corporations to distribute consultation information to whomever the nominated representative corporations deem appropriate including members of the nominated representative corporations who are communal rights holders.

Having said this, as set out in further detail in **Section 6.5.2.2**, individuals are also given the opportunity to self-identify, consult and provide their own feedback on the proposed activity. When approached in this way, Woodside will engage individuals as relevant persons and will also (subject to any confidentiality or cultural restrictions) advise the nominated representative body of the consultation where it relates to cultural values. These methods of consultation are consistent with requirements for notification under the *Native Title Act 1993* (Cth), such as under the future act provisions (section 29), which requires notification of the Native Title Representative Body, the PBC (or nominated representative) and notification through newspapers. The notification process has been selected as a respectful, practical and pragmatic analogue for consultation with First Nations peoples, rather than requiring members to be notified via a formal authorisation process which aims to seek, from members, authorisation of agreements and native title/compensation claims under the *Native Title Act 1993* (Cth)²⁰.

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

6.5.2.2 Opportunity to Self-identify and Identifying Other Individuals

Woodside requests nominated representative corporations and Native Title Representative Bodies to identify other individuals to consult with or individuals who may seek to self-identify for a proposed activity. Woodside also advertises broadly through Indigenous, national and local advertising, social media and community engagement opportunities (as described in **Section 6.9.2**) 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 6.5.2.1**). 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 Owners authorised representative entities.
- Recognising the function of a PBC to represent communal interests and manage cultural values, Woodside requests that the information provided to representative entities is provided to their members, but Woodside recognises the process is voluntary and Woodside cannot compel them to do so nor seek to audit the representative entities for compliance with any request.
- Representative entities cannot provide membership details to Woodside due to individual confidentiality requirements.
- Woodside requests advice as to who else Woodside should be consulting but recognises the process is voluntary and cannot compel nominated representative corporations to provide this information.
- Modern Indigenous engagement practices rely on the building and maintaining of respectful relationships. Most nominated representative corporations to date have requested the building of that relationship, where one is not already in place.
- While Woodside has, in some cases, approached individual directors and elders outside of this process due to requirements imposed in 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.

²⁰ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193, at [104]

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.

6.5.2.3 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 also depend on the degree to which a relevant person is affected.

Woodside produces a Consultation Information Sheet for each EP which is provided to relevant persons and organisations to provide the opportunity for feedback on the activity (**Section 6.4.1**). In response to Traditional Custodians' feedback, Woodside has tailored effective consultation methods for its activities, specifically designed for Traditional Custodians, so that information is provided in a form that is readily accessible and appropriate. The targeted Consultation Summary Sheet (as described in **Section 6.9.2**) developed and reviewed by Indigenous representatives so that content is appropriate to the intended recipients, is then provided to relevant Traditional Custodian groups. Phone calls are made to provide context to the consultation.

Where face to face consultation meetings are requested, Woodside coordinates engagement at the Traditional Custodians' location of choice (where practicable) and with their nominated attendees. Key project personnel, environmental and First Nations relations experts are typically present to enable effective communication and prompt response to questions. Materials for these sessions incorporate visual aids such as photos, maps and videos, and plain language suitable for people with a non-technical background.

During consultation Woodside makes effort to provide relevant persons additional information, as appropriate, to meet relevant persons requests for additional information. A titleholder, however, can still be said to have provided sufficient information even where it has not provided all documents requested by a relevant person.

Woodside has sought to provide sufficient information to individual members of nominated representative corporations (such as PBCs) by providing information to representative bodies and suggesting 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.

6.5.2.4 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 6.4.2**).

6.6 Providing Feedback and Assessment of Merit of Objections or Claims

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

Woodside consults widely on its EPs and notes that feedback is received in various forms. Feedback that is considered inappropriate or that puts the environment, health, safety or wellbeing of Woodside employees or operations at risk will not be tolerated. Woodside respects people's rights to protest peacefully and lawfully but actions that put the environment, health, safety or wellbeing of Woodside employees or operations at risk go beyond those boundaries.

Woodside accepts feedback and engages in consultation in order to achieve the aims set out in **Section 6.2**. Woodside recognises that there are persons and organisations that take a view that Woodside's operations and/or growth projects should be stopped or at least delayed as far as possible. Whilst Woodside assesses

the merits of objections or claims received, it acknowledges NOPSEMA's guidance in its brochure entitled *Consultation on offshore petroleum environment plans information for the community*, which states that relevant persons are free to respond on any matter and raise any concern, however this may not be able to be considered if it is outside the scope or purpose of the environment plan and approval process, for example, statements of fundamental objection to offshore petroleum activities or information containing personal threats or profanities. Under regulation 34(g), there is no requirement for a relevant person to agree or confirm that they have been adequately consulted.

Feedback from relevant persons is reviewed and an assessment of the merits is made of information provided as well as objections or claims about the adverse impact of each activity to which the EP relates. This might, for instance, be done through a review of data and literature and for relevance to the nature and scale of the activity outlined in the EP. Consistent with the aim of consultation in **Section 6.2**, 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 6.3.4**). This information is summarised in **Appendix F, Table 1** and **Table 2** of the EP and includes a statement of Woodside's response, or proposed response, if any, to each objection and claim.

In accordance with regulation 26(8) of the Environment Regulations, sensitive information (if any) in an EP, and the full text of any response by a relevant person to consultation under regulation 25, must be contained in the sensitive information part of the plan and not anywhere else in the plan.

6.7 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 10.5**), 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 (as set out in **Section 6.2**).

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 (see **Section 6.2**), Woodside will apply its Management of Change and Review process as appropriate (see **Section 10.3.5**).

6.8 Woodside's Methodology to Identify Relevant Persons

6.8.1 Identification of Relevant Persons under Regulation 25(1)(a), (b) and (c)

Woodside's methodology for identifying relevant persons under regulations 25(1)(a), (b) and (c) is as follows:

- Woodside considers the defined responsibilities of each of the departments and agencies to which the activities in the EMBA to be carried out under the EP may be relevant. This list of relevant department and agencies is formulated by reference to the responsibilities of the government departments as set out on their websites, in NOPSEMA's *GL1887 – Consultation with Commonwealth agencies with responsibilities in the marine area* guideline (January 2023), which describes where the Department is a relevant agency under the Environment Regulations, as well as experience and knowledge that Woodside has gained from years of operating in relation to the departments and agencies which Woodside has historically consulted over the years. This list is revised from time to time, for example, for the purposes of accommodating government restructures, renaming of departments, shifting portfolios and/or to account for new agencies that might arise.
- Woodside has categorised government department or agency groups as follows:

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

- Woodside considers each of the responsibilities of the Departments and agencies and determines whether those responsibilities overlap with potential risks and impacts specific to the proposed Petroleum Activity in the EMBA. The assessment is both activity and location based.
- Woodside acknowledges the roles and responsibilities of government departments and agencies acting on behalf of various industry participants. For example, AMSA – Marine Safety is responsible for the safety of vessels and the seafarers who are operating in the domestic commercial shipping industry and AHO is responsible for maritime safety and Notices to Mariners. To undertake the petroleum activity in a manner that prevents a substantially adverse effect on the potential displacement of marine users, Woodside therefore consults AMSA – Marine Safety and AHO on its proposed activities. Woodside considers each of the responsibilities of the departments and agencies and determines those that would either be involved in the incident response itself or in relation to the regulatory or decision-making capacity with respect to planning for the unlikely event of a worst-case hydrocarbon release incident response specific to the petroleum activity. Feedback received, if any, is assessed in accordance with the intended outcome of consultation (as set out in **Section 6.2**).
- The list of those government departments and agencies assessed as relevant is set out in **Table 6-3**.
- Feedback received, if any, is assessed in accordance with the intended outcome of consultation (as set out in **Section 6.2**) and summarised at **Appendix F, Table 1** and **Table 2** as appropriate to the relevance assessment.

Woodside does not consult with departments or agencies with interests that do not overlap with risks and impacts specific to the proposed petroleum activity in the EMBA or would not be involved in incident response planning. For instance, in this EP, Woodside has not consulted with the department for the Minister of the Northern Territory because there is no overlap given that the proposed activities are in Commonwealth waters offshore of Western Australia.

6.8.2 Identification of Relevant Persons under Regulation 25(1)(d))

Relevant persons under regulation 25(1)(d) are defined as a person or organisation whose functions, interests or activities may be affected by the activities to be carried out under the EP. In identifying relevant persons, Woodside considers the planned activities to be carried out under this EP (described in **Section 3**)

To identify relevant persons who fall within regulation 25(1)(d), Woodside adopts the following methodology, and then undertakes consultation with relevant persons which is set out further in **Section 6.8**.

- 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 or that overlap with the Operational Area and EMBA; and
 - whether a person or organisation's functions, interests or activities may be affected by Woodside's proposed planned or unplanned activities to be carried out under the EP.
- This assessment will include applying judgement, knowledge and current literature.
- Further, to assist in identifying the full range of relevant persons, Woodside considers the impacts and risks associated with its proposed activities and considers the broad categories of relevant persons who may be affected by the activities proposed to be carried out under the EP. For this EP, the broad categories are identified in **Table 6-1** below and identification methodology applied as set out in **Table 6-2**.

- The list of those persons or organisations assessed as relevant and persons or organisations Woodside separately chose to contact is set out in **Table 6-3**.
- Feedback received, if any, is assessed in accordance with the intended outcome of consultation (as set out in **Section 6.2**) and applying the categories of relevant persons methodology outlined in **Table 6-2**, as appropriate.
- Feedback from relevant persons is summarised at **Appendix F, Table 1**. Feedback from persons assessed as not relevant but whom Woodside chooses to contact is summarised at **Appendix F, Table 2**.

Table 6-1: Categories of relevant persons

Category	Explanation
Commercial fisheries and peak representative bodies	Commonwealth or State Commercial Fishery with a fishery management plan recognised under the <i>Commonwealth Fisheries Management Act 1991</i> (Cth) and <i>Western Australian Fish Resources Management Act 1994</i> (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.
Titleholders and Operators	Registered holder of an offshore petroleum title or GHG title governed by the OPGGS Act and associated regulations.
Peak industry representative bodies	Recognised peak organisation(s) for the oil and gas sector.
Traditional Custodians (individuals and/or groups/entity)	Traditional Custodians are First Nations Australians who hold cultural rights and interests or have cultural functions or perform cultural activities over particular lands and waters. Where a First Nations person, group or entity self-identifies and/or asserts cultural rights, interests, functions or activities they will be included in the definition of Traditional Custodian for the purpose of this EP.
Nominated Representative Corporations	Nominated representative corporations are Traditional Custodians nominated representative institutions such as Prescribed Body Corporates (PBC). PBCs are established under the Native Title Act 1993 by Traditional Custodians to represent their entire Traditional Custodian group (defined broadly by reference to descents from an ancestor set who were known to be the Traditional Custodians at the time of European colonisation) and their interests including, among other things, management and protection of cultural values.
Native Title Representative Bodies	A Representative Aboriginal/Torres Strait Islander Bodies (RATSIB) is a regional organisation appointed under the <i>Native Title Act 1993</i> (NTA) with prescribed functions, set out in Part 11 of the <i>Native Title Act 1993</i> , which relate to: facilitation and assistance; certification; dispute resolution; notifications; agreement making. They are also known, and referred to here, as Native Title Representative Bodies.
Historical heritage groups or organisations	Legislated or government enlisted groups or organisations responsible for the management of marine heritage.

Category	Explanation
Local government and recognised local community reference/liaison groups or organisations	Local government governed by the <i>Local Government Act 1995</i> (WA) which is responsible for representing the local community. Recognised local community reference/liaison group or organisation in relation to oil and gas matters.
Other non-government groups or organisations	Non-government organisation with public website material targeting the proposed activity.
Research Institutes and local conservation groups or organisations	Research institutes are government or private institutions that conduct marine or terrestrial research. Local conservation groups are local non-government organisation that regularly conduct conservation activities focused on the local environment or wildlife.

Table 6-2: Methodology for identifying relevant persons within the EMBA undertaken under subcategory 25 (1) (d) – by category.

Category	Relevant Person Identification Methodology
Commercial fisheries (Commonwealth and State) and peak representative bodies	<p>Woodside assesses relevance for commercial fisheries (Commonwealth and State) and their representative bodies using the following next steps in its methodology:</p> <ul style="list-style-type: none"> 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 5.6.2). Woodside acknowledges WAFIC’s consultation guidance²¹ (accessed on 2 February 2023), that titleholders develop separate consultation strategies for significant unplanned events (for example oil spill) where titleholders can demonstrate the likelihood of such events occurring is extremely low. WAFIC’s guidance is that consultation on unplanned events resulting in an emergency scenario should only be undertaken if an incident occurs. 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 EMBA (see Section 5.6.2). <p>Assessment of relevance:</p> <ul style="list-style-type: none"> State commercial fisheries that have been assessed as having a potential for interaction within the EMBA (see Section 5.6.2) are assessed as relevant to the proposed activity. Woodside acknowledges WAFIC’s consultation guidance¹ (see above) and applies this by: <ul style="list-style-type: none"> – directly consulting fishery licence holders that are assessed as having a potential for interaction in the Operational Area – consulting fisheries that are assessed as having a potential for interaction in the EMBA via WAFIC. Commonwealth commercial fisheries that have been assessed as having a potential for interaction within EMBA (see Section 5.6.2) are assessed as relevant to the proposed activity. If Woodside has identified that a Commonwealth or State fishery is a relevant person, then Woodside also consults the fisheries relevant representative body. For example, WAFIC represents the interests of State fisheries in Western Australia. If a state fishery is identified as relevant,

i. ²¹ [Consultation Approach for Unplanned Events - WAFIC](#)

Category	Relevant Person Identification Methodology
	<p>Woodside would also identify WAFIC as relevant. Recognised Commonwealth fishery representative bodies are identified by AFMA via its website. WAFIC is the only recognised state fishery representative body.</p>
<p>Recreational marine users and peak representative bodies</p>	<p>Woodside assesses relevance for recreational marine users and peak representative bodies using the following next steps in its methodology:</p> <ul style="list-style-type: none"> • From Woodside knowledge and operating experience, 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. <p>Assessment of relevance:</p> <ul style="list-style-type: none"> • 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.
<p>Titleholders and Operators</p>	<p>Woodside assesses relevance for other titleholders and operators using the following next steps in its methodology:</p> <ul style="list-style-type: none"> • Using WA Petroleum Titles (DMIRS-011) to determine overlap with other Titleholders or Operators permit areas within the EMBA. • From Woodside knowledge and operating experience, knowledge of other operators in the area. • Woodside produces a map showing the outcome of this assessment. <p>Assessment of relevance:</p> <ul style="list-style-type: none"> • Titleholders and Operators whose permit areas are identified as having an overlap within the EMBA are assessed as relevant.
<p>Peak industry representative bodies</p>	<p>Woodside assesses relevance for peak industry representative bodies using the following next steps in its methodology:</p> <ul style="list-style-type: none"> • 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 additional peak industry representative bodies have been created whose responsibilities may overlap with Woodside’s proposed activities within the EMBA. <p>Assessment of relevance:</p> <ul style="list-style-type: none"> • Peak industry representative bodies whose responsibilities are identified as having an overlap with Woodside’s proposed activities within the EMBA are assessed as relevant.
<p>Traditional Custodians (individuals and/or groups/entity) and Nominated</p>	<p>Consistent with its understanding of the matters discussed in Section 5.6.1 and 6.5, to identify Traditional Custodian groups or individuals, Woodside:</p>

Category	Relevant Person Identification Methodology
<p>Representative Corporations</p>	<ul style="list-style-type: none"> • Uses existing systems of recognition to identify First Nations groups who overlap or are coastally adjacent to the EMBA (for example, recognition provided under native title or cultural heritage legislation, or marine park management plans, or identification by other First Nations groups or entities) (Section 5.6.1) • Notifies and invites consultation with First Nations people through their nominated representative corporation (for example PBCs); or, in the case of native title, and where appropriate, the Native Title Representative Body (Section 6.9.2) • Requests the nominated representative body to forward the notifications and invitations to consult to their members (members are individual communal rights holders) (Section 6.5.2.1) • Requests advice as to other First Nations groups or individuals that should be consulted (Section 6.5.2.1) • Requests the nominated representative body to provide consultation materials to its members (Section 6.5.2.3) • Advertises widely so as to invite self-identification and consultation by First Nations groups and/or individuals (Section 6.5.2.3). <p>Further detail to Woodsides methodology is as follows.</p> <p>Woodside uses the databases of the National Native Title Tribunal (Section 6.5.2.1):</p> <ul style="list-style-type: none"> • to understand whether there are Native Title Claims (historical or current) or determinations overlapping or coastally adjacent to the EMBA. • to understand whether there are relevant Indigenous Land Use Agreements (ILUA), registered with the National Native Title Tribunal that overlap or are adjacent to the EMBA that may identify Traditional Custodians or representative bodies to contact regarding potential cultural values. <p>Where there is a positive determination of native title, contacting the PBC or, where their representative is a Native Title Representative Body contacting the Native Title Representative Body.</p> <p>Where appropriate, contacting the relevant Native Title Representative Body to request a list of First Nations groups asserting Traditional Custodianship over an area of coastline adjacent to the EMBA.</p> <p>Review of Commonwealth and State Marine Park Management Plans that overlap the EMBA which may identify Traditional Custodians or representative bodies to contact regarding potential cultural values.</p> <p>First Nations groups or individuals identified by a Traditional Custodian, nominated representative corporation, Native Title Representative Body.</p> <p>Request to the PBC to distribute Woodside consultation materials through its membership. Woodside is unable to contact this membership through other means.</p> <p>Woodside has a number of public notification and information sharing processes by which individual Traditional Custodians can become aware of the proposed activity, its risks and impacts, and self-identify.</p> <p>Individuals that consider their functions, interests or activities may be affected by a proposed activity are provided an opportunity to self-identify for each EP. Woodside does not presume that self-identification for an activity, covered by another EP, automatically means that an individual/s functions, interest and activities may be affected by other activities where EMBA's overlap. This decision is for the individual to make. The public notification, information sharing, and consultation processes Woodside puts in place enables Traditional Custodians to become aware of proposed activities, assess risks and impacts to their values, and enable individuals to self-identify.</p>

Category	Relevant Person Identification Methodology
	<p>Assessment of relevance:</p> <ul style="list-style-type: none"> 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	<p>Woodside assesses relevance for Native Title Representative Bodies using the following steps in its methodology:</p> <ul style="list-style-type: none"> A Representative Aboriginal/Torres Strait Islander Bodies (RATSIB) is a regional organisation appointed under the <i>Native Title Act 1993</i> (NTA) with prescribed functions set out in Part 11 of the <i>Native Title Act 1993</i>, which relate to: facilitation and assistance; certification; dispute resolution; notifications; agreement making. They are also known, and referred to here, as Native Title Representative Bodies. Review of National Native Title Tribunal RATSIB areas that overlap or are coastally adjacent to the EMBA. <p>Assessment of relevance:</p> <ul style="list-style-type: none"> Where the area for which a Native Title Representative Body is recognised under the <i>Native Title Act 1993</i>, overlaps with the EMBA or is coastally adjacent to the EMBA, Woodside will assess the Native Title Representative Body as relevant.
Historical heritage groups or organisations	<p>Woodside assesses relevance for groups or organisations whose responsibilities are focused on historical heritage using the following next steps in its methodology:</p> <ul style="list-style-type: none"> Using the Australasian Underwater Cultural Heritage Database to assess any known records Maritime Cultural Heritage sites (shipwrecks, aircraft, and relics) within the EMBA (see Section 5.6.1). <p>Assessment of relevance:</p> <ul style="list-style-type: none"> Where there is a known underwater heritage site (shipwrecks, aircraft, and relics) within the EMBA, the relevant group or organisation that manages the site will be assessed as relevant.
Local government and recognised local community reference/liaison groups or organisations	<p>Woodside assesses relevance for local government and recognised local community reference/liaison groups or organisations using the following next steps in its methodology:</p> <ul style="list-style-type: none"> 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 instance relevant Regional Development Commissions), Local Government, Indigenous Groups, Industry representative bodies, and 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 any overlap with the EMBA. For example, the Exmouth Community Liaison Group's area of responsibility in relation to Woodside's operational, development and planning activities, is defined in the terms of reference as the Exmouth sub-basin. Comparatively, the Karratha Community Liaison Group's area of responsibility is the Pilbara region (i.e., onshore).

Category	Relevant Person Identification Methodology
	<p>Assessment of relevance:</p> <ul style="list-style-type: none"> 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.
<p>Other non-government groups or organisations</p>	<p>Woodside assesses relevance for other non-government groups or organisations using the following next steps in its methodology:</p> <ul style="list-style-type: none"> 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 material specific to the proposed activity at the time of development of the EP. Organisation has a publicly available mission statement (or purpose) that clearly describes their collective functions, interests, or activities. Review of current website material to identify targeted information which demonstrates functions, interests, or activities relevant to the potential risks and impacts associated with planned activities. <p>Assessment of relevance:</p> <ul style="list-style-type: none"> 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 (as set out in Section 6.2) will be assessed as relevant.
<p>Research institutes and local conservation groups or organisations</p>	<p>Woodside assesses relevance for research institutes and local conservation groups or organisations using the following next steps in its methodology:</p> <ul style="list-style-type: none"> 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. <p>Assessment of relevance:</p> <ul style="list-style-type: none"> 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. 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.

6.8.3 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).

6.8.4 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 **Table 6-3** and **Appendix F, Table 1**.

Persons or organisations that Woodside assessed as not relevant but nonetheless chose to contact at its discretion in accordance with **Section 6.3.4** or self-identified and Woodside assessed as not relevant are summarised at **Table 6-3** and **Appendix F, Table 2**.

Table 6-3: Assessment of relevance

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). ABF's responsibilities aren't relevant to the activity as there are no proposed vessel activities. Woodside chose to contact ABF at its discretion in line with Section 6.3.4.	No
Australian Fisheries Management Authority (AFMA)	Responsible for managing Commonwealth fisheries	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(a). The Western Deepwater Trawl Fishery is active in the EMBA. AFMA's responsibilities may be relevant to the activity as the as the Western Deepwater 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). AHO's responsibilities may be relevant to the activity as infrastructure is proposed to be left <i>in situ</i> requiring navigational chart updates.	Yes
Australian Maritime Safety Authority (AMSA) – Marine Safety	Statutory agency for vessel safety and navigation	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(a). AMSA – Marine Safety's responsibilities are not relevant to the activity as there are no proposed field activities. Woodside chose to contact AMSA – Marine Safety at its discretion in line with Section 6.3.4 .	No
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). AMSA – Marine Pollution's responsibilities are not relevant to the activity as the proposed activity does not have a hydrocarbon spill risk which may require AMSA response in Commonwealth waters.	No

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
Department of Agriculture, Fisheries and Forestry (DAFF) – Fisheries (formerly DAWE)	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). The Western Deepwater Trawl Fishery is active in the EMBA. DAFF - Fisheries responsibilities may be relevant to the activity as the as the Western Deepwater 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). DoD’s functions may be relevant to the activity as defence training areas lie within 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). No State fisheries are active in the EMBA. Under regulation 25(1)(e), Woodside at its discretion has chosen to assess DPIRD as a relevant person.	Yes
Department of Transport (DoT)	Legislated responsibility for oil pollution response in State waters	Woodside has applied its methodology for ‘Government departments / agencies – marine’ under regulation 25(1)(b). The proposed activity does not have a hydrocarbon spill risk requiring DoT response in State waters.	No
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). There is no known Maritime Cultural Heritage overlapping the EMBA.	No
Pilbara Ports Authority	Responsible for the operation of the Port of Dampier.	Woodside has applied its methodology for ‘Government departments / agencies – marine’ under regulation 25(1)(a). The proposed activity does not have the potential to impact Pilbara Ports Authority’s responsibilities as the EMBA does not overlap the Pilbara Ports Authority’s area of responsibility.	No

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 – Environment			
<p>Department of Agriculture, Fisheries and Forestry (DAFF) – Biosecurity (marine pests, vessels, aircraft and personnel) <i>(formerly DAWE)</i></p>	<p>DAFF administers, implements and enforces the Biosecurity Act 2015. The Department requests to be consulted where an activity has the potential to transfer marine pests. DAFF also has inspection and reporting requirements to ensure that all conveyances (vessels, installations and aircraft) arriving in Australian territory comply with international health regulations and that any biosecurity risk is managed. The Department requests to be consulted where an activity involves the movement of aircraft or vessels between Australia and offshore petroleum activities either inside or outside Australian territory.</p>	<p>Woodside has applied its methodology for ‘Government departments / agencies – environment’ under regulation 25(1)(a). DAFF – Biosecurity’s (formerly DAWE) responsibilities are not relevant to the proposed activities as there are no proposed field activities.</p>	<p>No</p>
<p>Department of Climate Change, Energy, the Environment and Water (DCCEEW) <i>(formerly DAWE)</i></p>	<p>Responsible for implementing Commonwealth policies and programs to support climate change, sustainable energy use, water resources, the environment and our heritage. <i>Administers the Underwater Cultural Heritage Act 2018 in collaboration with the States, Northern Territory and Norfolk Island, which is responsible for the protection of shipwrecks, sunken aircraft and other types of underwater heritage</i></p>	<p>Woodside has applied its methodology for ‘Government departments / agencies – environment’ under regulation 25(1)(a). DCCEEW’s (formerly DAWE) responsibilities may be relevant to the proposed activities in the EMBA as there are potential environmental impacts from the proposed activity. There is no known Maritime Cultural Heritage overlapping the EMBA.</p>	<p>Yes</p>

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
	<i>and their associated artefacts in Commonwealth waters.</i>		
DCCEEW – Sea Dumping Branch (formerly DAWE)	Responsible for administering the <i>Environment Protection (Sea Dumping) Act 1981</i> (Sea Dumping Act).	Woodside has applied its methodology for ‘Government departments / agencies – environment’ under regulation 25(1)(a). DCCEEW – Sea Dumping Branch (formerly DAWE) responsibilities may be relevant to the proposed activities as infrastructure is planned to be left <i>in situ</i> .	Yes
Director of National Parks (DNP)	Responsible for the management of Commonwealth parks and conservation zones.	Woodside has applied its methodology for ‘Government departments / agencies – environment’ under regulation 25(1)(a). DNP’s responsibilities are not relevant to the proposed activity as the proposed activity does not have a hydrocarbon spill risk which may require AMSA response in Commonwealth waters and proposed activities do not overlap any Australian Marine Parks (AMPs) or have the potential to impact on the values of any AMPs. Woodside chose to contact the DNP at its discretion in line with Section 6.3.4 .	No
Ningaloo Coast World Heritage Advisory Committee (NCWHAC)	Supports the DBCA to manage the Ningaloo Coast World Heritage Area.	Woodside has applied its methodology for ‘Government departments / agencies – environment’ under regulation 25(1)(a). The NCWHAC’s responsibilities are not relevant to the activity as the EMBA does not overlap the Ningaloo Marine Park. Woodside chose to contact the NCWHAC at its discretion in line with Section 6.3.4 .	No
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). Although the EMBA does not overlap any WA parks, forests or reserves, activities may have the potential to impact DBCAs responsibilities as there is marine tourism in the EMBA.	Yes
Commonwealth and State Government Departments or Agencies – Industry			
Department of Industry, Science and Resources (DISR)	Department of relevant Commonwealth Minister.	Required to be consulted under regulation 25(1)(a).	Yes

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
<i>(formerly DISER)</i>			
Department of Energy, Mines, Industry Regulation and Safety (DEMIRS)	Department of relevant State Minister	Required to be consulted under regulation 25(1)(c).	Yes
<i>Commonwealth Commercial fisheries and Representative Bodies</i>			
North West Slope and 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). The fishery does not overlap the EMBA.	No
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). Although the fishery overlaps the EMBA, it has not been active in the EMBA within the last 5 years. Woodside does not consider that the proposed activity will present a risk to licence holders, given since 1992, most 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
Western Deepwater Trawl Fishery	Commonwealth commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d). The fishery overlaps the EMBA and has been active in the EMBA within the last 5 years.	Yes

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
Western Skipjack Fishery	Commonwealth commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d).</p> <p>Although the fishery overlaps the EMBA, it has not been active in the EMBA within the last 5 years.</p> <p>Woodside does not consider that the activity will present a risk to licence holders, given the fishery spans the Australian Fishing Zone west of Victoria and the Torres Strait. The Fishery is not currently active, and no fishing has occurred since 2009 (Patterson et al., 2022). In addition, interactions are not expected given the species' pelagic distribution fishing methods for species fished by licence holders.</p>	No
Western Tuna and Billfish Fishery	Commonwealth commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d).</p> <p>Although the fishery overlaps the EMBA, it has not been active in the EMBA within the last 5 years.</p>	No
Commonwealth Fisheries Association (CFA)	Represents the interests of commercial fishers with licences in Commonwealth waters	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d).</p> <p>The Western Deepwater Trawl Fishery is active in the EMBA.</p> <p>CFA's functions may be relevant to the activity as the Western Deepwater Trawl Fishery is active in the EMBA.</p>	Yes
Australian Southern Bluefin Tuna Industry Association (ASBTIA)	Represents the interests of the Southern Bluefin Tuna Fishery and Western Skipjack Fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d).</p> <p>The Southern Bluefin Tuna Fishery has been assessed as not relevant to the proposed activity. As the peak representative body for the Southern Bluefin Tuna Fishery, the ASBTIA has also been assessed as not relevant.</p> <p>Woodside has provided information to the ASBTIA at its discretion in line with Section 6.3.4 on AFMA advice that it expects all Commonwealth fishers who</p>	No

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
		have entitlements to fish within the proposed area to be consulted, which can be through the relevant fishing industry associations.	
Tuna Australia	Represents the interests of the Western Tuna and Billfish Fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d).</p> <p>The Western Tuna and Billfish Fishery has been assessed as not relevant to the proposed activity. As the peak representative body for the Western Tuna and Billfish Fishery, Tuna Australia has also been assessed as not relevant.</p> <p>Woodside has provided information to Tuna Australia at its discretion in line with Section 6.3.4 on AFMA advice that it expects all Commonwealth fishers who have entitlements to fish within the proposed area to be consulted, which can be through the relevant fishing industry associations.</p>	No
Pearl Producers Association (PPA)	Peak representative organisation of The Australian South Sea Pearling Industry, with members in Western Australia and the Northern Territory	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d).</p> <p>The Pearl Oyster Managed Fishery has been assessed as not relevant to the proposed activity.</p> <p>As the peak representative body for the Pearl Oyster Managed Fishery, the PPA has also been assessed as not relevant.</p> <p>Woodside chose to contact the PPA at its discretion in line with Section 6.3.4.</p>	No
State Commercial Fisheries and Representative Bodies			
Marine Aquarium Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d).</p> <p>Although the fishery overlaps the EMBA it has not been active in the EMBA within the last 5 years.</p> <p>Woodside does not consider that the activity will present a risk to licence holders given the fishery generally collects fish in water depths less than 30 m. Further, the fishery is typically more active in waters south of Broome and</p>	No

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
		higher levels of effort around the Capes region, Perth, Geraldton, Exmouth, Dampier and Broome (Newman et al., 2021b).	
South West Coast Salmon Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d).</p> <p>Although the fishery overlaps the EMBA the fishery has not been active in the EMBA within the last 5 years.</p> <p>Woodside does not consider that the activity will present a risk to licence holders, given fishers are active south of Perth and from the beach (previous WAFIC advice). Further, no fishing occurs north of the Perth Metropolitan Area and therefore, no effort occurs within the EMBA.</p>	No
Mackerel Managed Fishery (Area 3)	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d).</p> <p>Although the fishery overlaps the EMBA, the fishery has not been active in the EMBA within the last 5 years.</p> <p>Woodside does not consider that the activity will present a risk to licence holders given the target species and gear type are pelagic.</p>	No
Pilbara Crab Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d).</p> <p>Although the fishery overlaps the EMBA, the fishery has not been active in the EMBA within the last 5 years.</p> <p>Woodside does not consider that the activity will present a risk to licence holders given target species is blue swimmer crab generally at less than 50 m water depth.</p>	No
West Coast Deep Sea Crustacean Managed Fishery	State commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d).	No

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
		<p>Although the fishery overlaps the EMBA, the fishery has not been active in the EMBA within the last 5 years.</p> <p>Woodside does not consider that the activity will present a risk to licence holders given the fishery is a 'pot' fishery using baited pots operated in a long-line formation in the shelf edge waters (> 150 m) of the West Coast and Gascoyne Bioregions. The target species do not typically occur at the depths of the EMBA.</p>	
Demersal Scalefish Fishery: Pilbara Trawl Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d).</p> <p>The fishery does not overlap the EMBA.</p>	No
Pilbara Trap Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d).</p> <p>The fishery does not overlap the EMBA.</p>	No
Pilbara Line Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d).</p> <p>Although the fishery overlaps the EMBA, it has not been active in the EMBA within the last 5 years.</p>	No
Western Australian Fishing Industry Council (WAFIC)	Represents the interests of commercial fishers with licences in State waters.	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d).</p> <p>No State fisheries are active in the EMBA.</p> <p>Woodside chose to contact WAFIC at its discretion in line with Section 6.3.4.</p>	No
Recreational Marine Users and Representative Bodies			
Exmouth Recreational Marine Users	Gascoyne-based dive, tourism and charter operators	Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 25(1)(d).	Yes

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
		Activities have the potential to impact Exmouth-based dive, tourism and charter operator's functions, interests or activities due to the location of activities and there has been recorded charter effort in the EMBA in the past 5 years.	
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). 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
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). 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). 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
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). AEP's responsibilities are identified as having an intersect with Woodside's planned activities in the EMBA.	Yes
Traditional Custodians and Nominated Representative Corporations			
Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC)	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and nominated representative corporations' under regulation 25(1)(d).	Yes

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
		<p>The Gnulli, Gnulli #2 and Gnulli #3 - Yinggarda, Baiyungu and Thalanyji People native title claim does not overlap the EMBA. The claim, for which the NTGAC and YAC are the Registered Native Title Body Corporates holding native title on behalf of the Baiyungu, Thalanyji and Yinggarda people, is coastally adjacent to the EMBA.</p> <p>The NTGAC's nominated representative is the Yamatji Marlpa Aboriginal Corporation (YMAC) and the NTGAC executive officer and contact officer pursuant to the Corporations (Aboriginal and Torres Strait Islander) Act 2006 is employed by YMAC. Woodside has therefore consulted the NTGAC, via YMAC.</p>	
Yinggarda Aboriginal Corporation (YAC)	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians and nominated representative corporations' under regulation 25(1)(d).</p> <p>The Gnulli, Gnulli #2 and Gnulli #3 - Yinggarda, Baiyungu and Thalanyji People native title claim does not overlap the EMBA. The claim, for which the NTGAC and YAC are the Registered Native Title Body Corporates holding native title on behalf of the Baiyungu, Thalanyji and Yinggarda people, is coastally adjacent to the EMBA.</p> <p>The YAC nominated representative was the YMAC and the YAC executive officer and contact officer pursuant to the Corporations (Aboriginal and Torres Strait Islander) Act 2006 is employed by YMAC. Woodside therefore consulted YAC, via YMAC. Woodside was advised that as of late April 2023, the nominated representative for YAC was now Gumala Aboriginal Corporation.</p>	Yes
<i>Native Title Representative Bodies</i>			
Yamatji Marlpa Aboriginal Corporation (YMAC)	Native Title Representative Body	<p>Woodside has applied its methodology for 'Native Title Representative Bodies' under regulation 25(1)(d).</p> <p>YMAC is the Native Title Representative Body for the Yamatji and Pilbara regions of Western Australia. As such, they are not a Prescribed or Registered Native Title Body Corporate representing the rights and interests of an Indigenous Community but exist to assist native title claimants and holders.</p>	Yes

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
		<p>The NTGAC nominated representative is YMAC and the NTGAC executive officer and contact officer pursuant to the Corporations (Aboriginal and Torres Strait Islander) Act 2006 is employed by YMAC. Woodside has therefore consulted the NTGAC, via YMAC.</p> <p>YMAC was also the nominated representative for YAC. Woodside was advised that as of late April 2023, the nominated representative for YAC is now Gumala Aboriginal Corporation.</p> <p>Woodside contacted YMAC to seek guidance with respect to the appropriate Traditional Custodian group(s) to engage with respect to the proposed activity where this was not clear.</p> <p>YMAC's functions may be relevant to the proposed activity in relation to its facilitation and coordination function as a Native Title Representative Body under applicable federal legislation.</p>	
Historical Cultural Heritage Groups or Organisations			
Western Australian Museum	Manages 200 shipwreck sites of the 1,500 known to be located off the Western Australian coast.	<p>Woodside has applied its methodology for 'Historical cultural heritage groups or organisations under regulation 25(1)(d).</p> <p>There are no known shipwrecks overlapping the EMBA which the Western Australian Museum may be responsible for.</p>	No
Local Government and Community Representative Groups or Organisations			
Shire of Ashburton	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Onslow, Pannawonica, Paraburdoo and Tom Price.	<p>Woodside has applied its methodology for 'Local government and community representative groups or organisations under regulation 25(1)(d).</p> <p>The Shire of Ashburton's area of responsibility does not overlap the EMBA. Woodside chose to contact the Shire of Ashburton at its discretion in line with Section 6.3.4.</p>	No
Shire of Exmouth	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Exmouth, Learmonth and North West Cape.	<p>Woodside has applied its methodology for 'Local government and community representative groups or organisations under regulation 25(1)(d).</p> <p>The Shire of Exmouth's area of responsibility does not overlap the EMBA. Woodside chose to contact the Shire of Exmouth at its discretion in line with Section 6.3.4.</p>	No

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
Onslow Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the town of Onslow and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations under regulation 25(1)(d). The Onslow Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes
Exmouth Community Liaison Group (CLG) Base Marine Bhagwan Marine Cape Conservation Group Inc. DBCA Department of Defence Department of Transport Exmouth Bus Charter Exmouth Chamber of Commerce and Industry Exmouth District High School Exmouth Freight and Logistics Exmouth Game Fishing Club Exmouth Tackle and Camping Supplies Exmouth Visitors Centre Exmouth Volunteer Marine Rescue Fat Marine	The Exmouth CLG represents the interests of a range of local government, industry and community organisations in relation to oil and gas matters in the Exmouth region.	Woodside has applied its methodology for 'Local government and community representative groups or organisations under regulation 25(1)(d). The Exmouth CRG's area of responsibility under its terms of reference does not overlap the EMBA. Woodside chose to contact the Exmouth CLG at its discretion in line with Section 6.3.4.	No

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
Gascoyne Development Commission Gun Marine Services Ningaloo Lodge Offshore Unlimited Shire of Exmouth BHP Petroleum Santos Community Member			
Other Non-government Groups or Organisations			
Australian Conservation Foundation (ACF)	Non-government organisation	Woodside has applied its methodology for 'Other non-government groups or organisations under regulation 25(1)(d) to determine ACF's relevance for the proposed activity. Woodside has assessed that ACF's public website material does not demonstrate an interest with the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 6.2). Woodside chose to contact ACF at its discretion in line with Section 6.3.4 .	No
Conservation Council of Western Australia (CCWA)	Non-government organisation	Woodside has applied its methodology for 'Other non-government groups or organisations under regulation 25(1)(d) to determine CCWA's relevance for the proposed activity. Woodside has assessed that CCWA's public website material does not demonstrate an interest with the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 6.2). Woodside chose to contact CCWA at its discretion in line with Section 6.3.4 .	No
Greenpeace Australia Pacific (GAP)	Non-government organisation	Woodside has applied its methodology for 'Other non-government groups or organisations under regulation 25(1)(d) to determine GAP's relevance for the proposed activity.	No

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
		<p>Woodside has assessed that GAP's public website material does not demonstrate an interest with the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 6.2).</p> <p>Woodside chose to contact GAP at its discretion in line with Section 6.3.4.</p>	
Friends of the Earth Australia	Non-government organisation	<p>Woodside has applied its methodology for 'Other non-government groups or organisations under regulation 25(1)(d) to determine Friends of the Earth Australia's relevance for the proposed activity.</p> <p>Woodside has assessed that Friends of the Earth Australia's feedback demonstrates an interest with the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 6.2).</p>	Yes
Maritime Union of Australia (MUA)	Union representing members in the maritime industries	<p>Woodside has applied its methodology for 'Other non-government groups or organisations under regulation 25(1)(d) to determine MUA's relevance for the proposed activity.</p> <p>Woodside has assessed that the MUA's feedback demonstrates an interest with potential risks and impacts specific to the proposed petroleum activity and is in accordance with the intended outcome of consultation (as set out in Section 6.2).</p>	Yes
Research Institutes and Local Conservation Groups or Organisations			
Cape Conservation Group (CCG)	Local conservation group focused on protecting the terrestrial and marine environment of the North West Cape	<p>Woodside has applied its methodology for 'Research institutes and local conservation groups or organisations under regulation 25(1)(d) to determine CCG's relevance for the proposed activity.</p> <p>CCG's conservation activities do not have the potential to intersect with the EMBA as the EMBA does not overlap the North West Cape.</p> <p>Woodside chose to contact CCG at its discretion in line with Section 6.3.4.</p>	No
Protect Ningaloo	Local conservation group focused on protecting the Exmouth Gulf and Ningaloo Reef and Cape Range	<p>Woodside has applied its methodology for 'Research institutes and local conservation groups or organisations under regulation 25(1)(d) to determine Protect Ningaloo's relevance for the proposed activity.</p>	No

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
		<p>Protect Ningaloo’s conservation activities do not have the potential to intersect with the EMBA as the EMBA does not overlap the North West Cape.</p> <p>Woodside chose to contact Protect Ningaloo at its discretion in line with Section 6.3.4.</p>	
<p>University of Western Australia (UWA)</p>	<p>Research institute</p>	<p>Woodside has applied its methodology for ‘Research institutes and local conservation groups or organisations under regulation 25(1)(d) to determine UWA’s relevance for the proposed activity.</p> <p>There is no known research being undertaken by the UWA that intersects within the EMBA.</p> <p>Woodside chose to contact UWA at its discretion in line with Section 6.3.4.</p>	<p>No</p>
<p>Western Australian Marine Science Institution (WAMSI)</p>	<p>Research institute</p>	<p>Woodside has applied its methodology for ‘Research institutes and local conservation groups or organisations under regulation 25(1)(d) to determine WAMSI’s relevance for the proposed activity.</p> <p>There is no known research being undertaken by WAMSI that intersects within the EMBA.</p> <p>Woodside chose to contact WAMSI at its discretion in line with Section 6.3.4.</p>	<p>No</p>
<p>Commonwealth Scientific and Industrial Research Organisation (CSIRO)</p>	<p>Research institute</p>	<p>Woodside has applied its methodology for ‘Research institutes and local conservation groups or organisations under regulation 25(1)(d) to determine CSIRO’s relevance for the proposed activity.</p> <p>There is no known research being undertaken by CSIRO that intersects within the EMBA.</p> <p>Woodside chose to contact CSIRO at its discretion in line with Section 6.3.4.</p>	<p>No</p>
<p>Australian Institute of Marine Science (AIMS)</p>	<p>Research institute</p>	<p>Woodside has applied its methodology for ‘Research institutes and local conservation groups or organisations under regulation 25(1)(d) to determine AIMS’s relevance for the proposed activity.</p> <p>There may be known research being undertaken by AIMS that intersects within the EMBA.</p>	<p>Yes</p>

6.9 Consultation Activities and Additional Engagement for the Stybarrow End State Decommissioning Environment Plan

Woodside has been conducting extensive consultation with relevant persons and other parties for this EP since May 2022, when consultation commenced with interested and affected stakeholders as part of a planned, integrated and consistent approach to stakeholder engagement for Woodside's proposed opportunities. A broad consultation process has been undertaken with relevant persons for this EP. Consultation aims to be inclusive, transparent, voluntary, respectful, and two-way. Consultation was undertaken by email, letter, phone call and/or meeting.

- Woodside advertised the planned activities proposed for this EP in national, state and relevant local newspapers including The Australian, The West Australian, Pilbara News, Midwest Times, North West Telegraph (15 February 2023) and Geraldton Guardian (17 February 2023) (see **Appendix F**, reference 2.32). Regional newspapers do not require subscription and are available and, in some cases, delivered directly to households. All communities within or adjacent to the EMBA had access to this information via this media. No direct comments or feedback were received from the advertisements.
- Consultation Information Sheets were provided to relevant persons and persons Woodside chose to contact (see **Section 6.3.4**), which included details such as an activity overview, maps, a summary of key risks and/or impacts and management measures (**Appendix F**, reference 1.1 and reference 2.1).
- An activity update Consultation Information Sheet was provided to relevant persons and persons Woodside chose to contact (see **Section 6.3.4**), which included an update regarding planned activities, information regarding the EMBA's for this EP and additional information relating to mitigation and management measures for this EP (**Appendix F**, reference 2.1).
- Since the commencement of the initial consultation period (May 2022), the Stakeholder Consultation Information Sheet (**Appendix F**, reference 1.1) was available on the BHP website, and the activity update Consultation Information Sheet has been available on the Woodside website since February 2023 (**Appendix F**, reference 2.1). The Woodside Information Sheets include a toll-free 1800 phone number and Woodside's feedback email address (feedback@woodside.com.au).
- Additional targeted information was provided to relevant marine users including AHO and AMSA – Marine Safety (**Appendix F**, reference 2.7, reference 3.19). This information included maps and additional information relevant to the specific category of persons. The relevant persons had a 30-day period in which to provide feedback.
- Where appropriate, Woodside conducted phone calls and meetings with relevant persons.
- Where appropriate, targeted follow-up emails were sent to relevant persons who had not provided a response prior to the close of the target feedback period.
- Woodside considered relevant person responses and assessed the merits and relevance of objections and claims about the potential adverse impact of the proposed activity set out in the EP, in accordance with the intended outcome of consultation (see **Section 6.2**).
- Consultation activities undertaken with relevant persons are summarised at **Appendix F**, Table 1.
- Engagement undertaken with persons or organisations Woodside assessed as not relevant but chose to contact (see **Section 6.3.4**) or self-identified and Woodside assessed as not relevant are summarised at **Appendix F**, Table 2.
- From 3 May 2023, Woodside commenced a geotargeted sponsored social media campaign to various local government authorities that are within or coastally adjacent to the EMBA for the proposed activities. The campaign brought the proposed activity to the attention of persons who may be interested; and advised persons or organisations on how they can find out about Woodside's proposed activities by visiting Woodside's website (**Appendix F**, reference 3.29).
- In October 2023, Woodside commenced a targeted social media campaign, both organic and sponsored, aimed at community members of key towns within the Kimberley, Pilbara, Gascoyne and Murchison regions. The campaign, *Are you a relevant person?*, delivered targeted information to several profiled relevant person groups via story and feed content with text and a short accessible video (**Appendix F**, reference 3.42). The campaign aims to support self-identification and provides information about

Woodside's consultation with relevant persons when preparing EPs and encourages participation in the consultation process. Six different videos with specific information for potentially relevant persons groups were launched on Facebook and Instagram:

- Local communities – volunteering
- Local communities - apprentices/trainees
- Commercial fishing
- Recreational fishing
- Recreational marine users
- Traditional Owners.

Results as of February 2024 are as follows:

Categories	Reach	Frequency	Impressions	Clicks	Click-through rate %
Marine Users	389,383	4.37	1,701,418	2,298	0.14%
Commercial Fisheries Demersal	297,701	2.84	846,530	853	0.10%
Commercial Fisheries Crab	207,104	2.54	526,472	484	0.09%
Volunteering	172,750	2.11	364,635	373	0.10%
Apprentices & trainees	97,083	2.21	214,324	311	0.15%
Traditional Owner Groups	92,209	1.56	143,965	212	0.15%

The commercial Fisheries, recreational fisheries and Traditional Owners videos are available on the Woodside [Consultation Activities](#) webpage.

6.9.1 Community Information Sessions

- On 17 June 2023, a Community Information Session was held in Exmouth. Ahead of the event, Woodside advertised the session via the means below which provided the opportunity for local individuals to become aware of the event and have access to experts and information about the activity. The methods used to promote these consultation opportunities were developed with input from Indigenous representatives and were adapted to incorporate culturally appropriate and accessible language to encourage engagement and understanding of Woodside's proposed activities:
- From 15–17 June 2023, Woodside commenced a geotargeted social media campaign in Exmouth and surrounding areas (**Appendix F**, reference 3.30) advising of the Community Information Session. Representatives from Woodside, including project and environment personnel equipped to answer technical questions, attended the event. Copies of the Consultation Information Sheets and bespoke targeted Consultation Summary Information Sheets were available to attendees. Community members were able to engage with Woodside representatives to understand the proposed activity and how it may affect them, ask questions and provide their feedback.
- On 22 June and 19 July 2023, a Community Information Session was held in Roebourne. Woodside advertised the session by distributing posters advising of the event details in the local community and visiting offices to raise awareness, including the offices of local Traditional Custodian groups (**Appendix F**, reference 3.31).

- On 28 and 29 June 2023, Community Information Sessions were held in Karratha. Woodside advertised the sessions via the means below providing the opportunity for local individuals to become aware of the event and have access to experts and information about the activity. The methods used to promote these consultation opportunities were developed with input from Indigenous representatives and were adapted to incorporate culturally appropriate and accessible language to encourage engagement and understanding of Woodside's proposed activities:
- Ahead of the 28 June 2023 event, posting a story on its Facebook page (**Appendix F**, reference 3.33), sharing details of its shopping centre stand where Consultation Information Sheets regarding planned and proposed activities were available, including the activities proposed under this EP.
- Ahead of the 29 June 2023 event, advertising the community information session in the Pilbara News (**Appendix F**, reference 3.32), geotargeting a social media campaign in Karratha and surrounding areas and posting the event details on its Facebook page (**Appendix F**, reference 3.34).
- Representatives from Woodside, including project and environment personnel equipped to answer technical questions, attended the event. Copies of the Consultation Information Sheets and bespoke targeted Consultation Summary Information Sheets were available to attendees. Community members were able to engage with Woodside representatives to understand the proposed activity and how it may affect them, ask questions and provide their feedback.
- On 5 and 6 August 2023, Woodside had a stand at the annual FeNaCING Festival held in Karratha. Members of Woodside's Corporate Affairs and Operations teams actively engaged with the community to discuss proposed EP activities. The stand included consultation information sheets for a number of EPs including this one. Woodside estimates that over 2,000 people visited the Woodside stand based on the number of consultation forms and questionnaires completed. The consultation opportunity was promoted prior to the Festival, in the Pilbara News on 2 August 2023 and a story appeared on the Woodside North West Facebook page on 2 August 2023 (**Appendix F**, reference 3.36).
- On 18 August 2023, Woodside consulted the community on Environment Plan activities at a stand at the Passion of the Pilbara festival in Onslow. Members of Woodside's Corporate Affairs actively engaged the community to discuss proposed Environment Plan activities. The stand included consultation information sheets for a number of Environment Plans including the Stybarrow Decommissioning and Field Management EP. Woodside estimates that about 100 people visited the Woodside stand. The consultation opportunity was promoted prior to the Festival in a story on the Woodside North West Facebook page on 17 August 2023 (**Appendix F**, reference 3.37).
- From 18 – 20 September 2023, Woodside consulted the Karratha, Port Hedland and Roebourne Communities on EP activities. Members of Woodside's Corporate Affairs, First Nations and Environment teams actively engaged the community to discuss proposed EP activities, including this EP (**Appendix F**, reference 3.38).
 - 18 September 2023: Karratha Shopping Centre 8am–12 pm; Red Earth Arts Precinct 3–6 pm. Estimated number of people consulted: 20.
 - 19 September 2023: Port Hedland, South Hedland Square 10 am–5 pm. Estimated number of people consulted: 20.
 - 20 September 2023: Roebourne, Woodside Office 10am–4pm. Estimated number of people consulted: 0 (Sorry Business – multiple Aboriginal Corporation meetings, unknown at the time of scheduling/planning engagements).

These consultation opportunities were promoted prior to regional consultation in the Pilbara News on 13 September 2023, and via Facebook and Instagram social media campaigns from 6 to 16 September 2023. An EP consultation banner with a QR code linking to the Consultation Activities page on the Woodside website was displayed at Woodside's stand along with current EP factsheets.
- On 16 and 17 October 2023, Woodside hosted community consultation sessions in Carnarvon and Denham to enable community members to understand Woodside's proposed activities and how it may affect them, ask questions, and provide their feedback (**Appendix F**, reference 3.40). Representatives from Woodside Project, Corporate Affairs and Environment teams were available to answer questions. Copies of the Consultation Information Sheet were available to attendees. Woodside advertised the sessions to enable individuals to self-identify, become aware of the community consultation, and provide feedback on proposed activities, through the following:

- Advertisement in the Pilbara News on 4 October 2023
- Geotargeted social media campaign advertising in Carnarvon and Denham and surrounding areas (+80 kms) from 9 to 16 October 2023
- Directly inviting local Traditional Custodian groups (**Appendix F**, Table 1)
- An EP consultation banner with QR code (linked to the Consultation Activities page on the Woodside website) was displayed along with current EP factsheets.
- On 23 October 2023, Woodside hosted a community consultation session in Exmouth to enable community members to understand Woodside’s proposed activities and how it may affect them, ask questions, and provide their feedback (**Appendix F**, reference 3.41). Representatives from Woodside Project, Corporate Affairs, First Nations, Environment, and Biodiversity and Science teams were available to answer questions. Copies of the Consultation Information Sheet were available to attendees. Woodside advertised the sessions to enable individuals to self-identify, become aware of the community consultation, and enable individuals to provide feedback on proposed activities, through the following:
 - Advertisement in the Pilbara News on 11 October 2023
 - Geotargeted social media campaign advertising in Exmouth and surrounding areas (+80 kms) from 2 to 9 October 2023
 - Directly inviting local Traditional Custodian groups (**Appendix F**, Table 1)
 - An EP consultation banner with QR code (linked to the Consultation Activities page on the Woodside website) was displayed at Woodside’s stand along with current EP factsheets.
- In March 2024, Woodside launched its first EP-focussed newsletter, *Let’s Talk*, as a new communication avenue to reach existing and potential stakeholders. Woodside is building on its existing consultation approach, providing additional resources to educate and inform relevant persons about its EP consultation. The newsletter aims to provide periodic updates to relevant persons about EP consultation activities, case studies on effective consultation with relevant persons and other EP focussed updates such as upcoming events where Woodside personnel will be consulting with the local community (**Appendix F**, reference 3.43).

6.9.2 Traditional Custodian Specific Consultation

In addition to the approaches above including community information sessions, additional activities were undertaken with relevant Traditional Custodians, which were specifically designed to provide for effective engagement with Traditional Custodians and so that information was provided in a form that was readily accessible and appropriate (**Section 6.5**).

Consultation undertaken specifically with Traditional Custodians for this EP includes:

- Direct engagement with nominated representative bodies via the contact listed on the ORIC (Office of the Registrar of Indigenous Corporations) website, requesting advice on how they would like to be engaged and asking whether other members and/or individuals should be consulted. This has resulted in:
 - Meetings with directors, elders and any nominated representatives, on country or in Perth
 - Requests and offers of resourcing to enable and support consultation.
 - Exchange of written feedback and correspondence
 - A Summary Consultation Information Sheet, developed and reviewed by Indigenous representatives in collaboration with technical experts to ensure content is appropriate to the intended recipients, was provided to relevant Traditional Custodian groups (**Appendix F**, reference 2.33) and phone calls to provide context to the consultation made.
- Ongoing efforts were made to engage and develop relationships with these bodies via a variety of means such as email, phone calls, alternative contacts, texts, social media and, in some cases, physical visits.

- Consultation meetings with attendees decided by Traditional Custodian groups, supported by senior Woodside representatives, subject matter experts, First Nations Relations advisers with skills and experience in community engagement. Meetings are developed through a two-way consultation process to ensure effective information sharing via:
 - Mutually agreed agenda avoiding time pressure.
 - Encouraging Traditional Custodian attendees to control the pace of the meeting and pause at any time to ask questions, seek clarification or provide feedback.
 - Visual aids such as posters, presentations, simplified technical videos and real-world pictures and footage.
 - Emphasis on potential planned and unplanned risks and impacts
 - Ample opportunity for questions and feedback
 - Discussion about ongoing relationship development and opportunities
 - Distribution of hard-copy Consultation Information Sheets and bespoke targeted Consultation Summary Sheet
 - Meeting all costs such as sitting fees, travel, legal support and executive support and other support required.
- Woodside has a geotargeted sponsored social media campaign to various communities that are coastally adjacent to the EMBA for the proposed activities.
 - The wide-reaching campaign brought the proposed activity to the attention of persons who may be interested and advised persons or organisations how they can find out about Woodside's proposed activities by visiting Woodside's website, which details the intent of consultation with relevant persons under the Environment Regulations. The reach of this campaign is shown in **Appendix F**, reference 3.29, providing the opportunity to consult via over 1,352,808 views to date across various regions.
 - These social media posts were developed with input from Indigenous representatives. Social media is a highly effective means to engage Indigenous audiences as outlined in Indigenous Digital Life (Professor Carlson, 2021). Advertisements used language and information appropriate to Indigenous audiences. Feedback from community engagements indicates a high level of penetration for this technique.

Woodside has employed a diverse range of techniques to allow relevant persons to become aware of the proposed activity and how it may affect their functions, activities or interests, and to understand their ability to provide feedback. The combination of PBC engagement meetings, traditional print media, social media and face-to face community interaction was designed with input from Indigenous representatives and adapted to the audience, so that it provides a wide-ranging opportunity to consult.

7 Woodside Environmental Risk Management Framework

Woodside has established a risk management governance framework with supporting processes and performance requirements that provide an overarching and consistent approach for identifying, assessing and managing risks. Woodside Policies have been formulated to comply with the intent of the Risk Management Policy and are consistent with the AS/ISO 31000-2009 Risk Management Principles and Guidance.

An integrated risk assessment and impact process is used to identify the most appropriate management strategy and relevant controls to reduce impacts and risks from planned (routine and non-routine) activities and unplanned (accidents/incidents) events to as low as reasonably practicable (ALARP) and acceptable levels (**Figure 7-1**). The process includes incorporating historic stakeholder and legal and environmental monitoring data for the relevant environmental impacts.

7.1 Evaluation of Impacts and Risks

A formal impact and risk assessment was completed for each environmental aspect and source of hazard for the activities described in **Section 4** using the Environmental Hazard Identification (ENVID) workshop process. The objective of the impact and risk assessment is to demonstrate that the identified impacts and risks associated with the petroleum activity are managed to a level that is ALARP and acceptable. The environmental impact and risk assessment presented in this EP has been informed by recent and historic hazard identification studies and workshops (e.g., HAZID/ENVID), reviews and associated desktop studies associated with the petroleum activity. Impacts, risks and potential consequences were identified based on planned and potential interaction with the activity (based on the description in **Section 4**), the existing environment (**Section 5**) and the outcomes of Woodside's consultation process (**Section 6**).

An ENVID workshop was conducted in February 2022 for the petroleum activities described in this EP. Participants included Woodside HSE, projects and engineering departments and specialist environmental consultants. Following the ENVID, impact and risk information was then classified, evaluated and tabulated for each planned activity and unplanned event. Environmental impacts and risks are recorded in an environmental impacts and risk register. The output of the ENVID is used to present the risk assessment and forms the basis to develop performance outcomes, performance standards and measurement criteria. The impact and risk assessment process is illustrated in **Figure 7-1** and considers planned (routine and non-routine) activities, unplanned (accidents/incidents) events and emergency conditions. The process considered previous risk assessments for similar activities, reviews of relevant studies, reviews of past performance, external stakeholder consultation feedback and a review of the existing environment. The process includes:

- confirming the sources of hazards for the planned activities and unplanned events
- identifying environmental impact and risk receptors
- analysing environmental impact and risk receptors
- identifying potential controls to reduce the impacts and risks.
- allocating a likelihood rating for all unplanned events
- allocating a severity rating for all planned activities and unplanned events
- accepting controls through an ALARP process
- assessing final acceptability of the risks and impacts using the Woodside acceptability criteria.

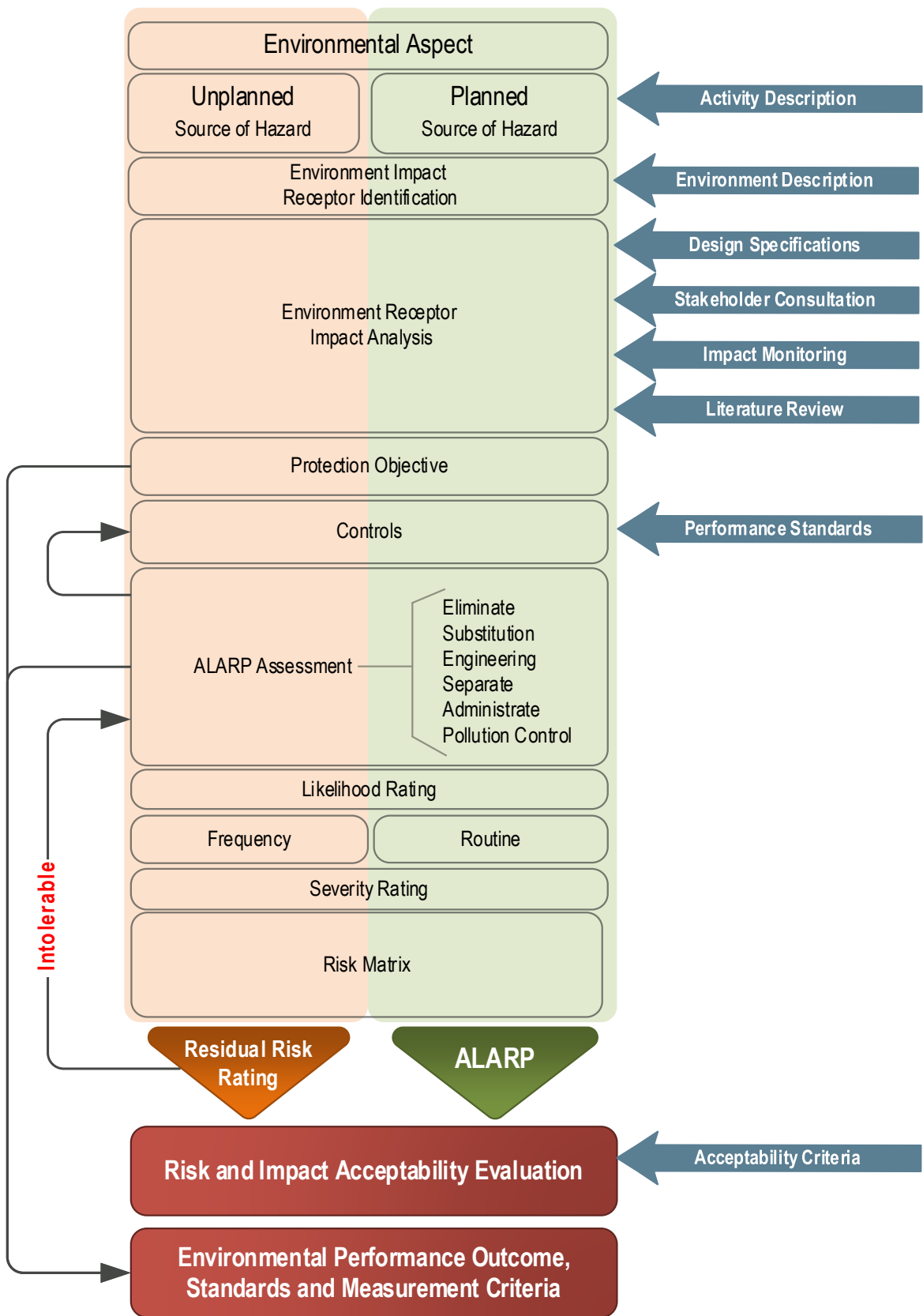


Figure 7-1: EP integrated impact and risk assessment process

7.1.1 Decision Context

Consistent with the United Kingdom Offshore Operators Association Framework for Risk-Related Decision Support (Oil and Gas UK, 2014), Woodside has applied decision criteria to determine whether impacts and risks created during the petroleum activity constitute ‘lower-order’ or ‘higher-order’ impacts and risks, and subsequently how each are managed to ALARP (**Section 7.2**) and acceptable levels (**Section 7.3**). This approach implies a level of proportionality wherein the principles of decision-making applied to each particular hazard are proportionate to the acceptability of environmental risk of that hazard.

The decision-making principles described in **Table 7-1** are consistent with the precautionary principle (as defined in the EPBC Act) and provide assurance that the environmental impacts and risks are reduced to ALARP and of an acceptable level.

Table 7-1: Risk-related decision-making framework

Decision Type	Description
Decision Type A	Woodside considers lower-order (or ‘Type A’) impacts or risks as those that: <ul style="list-style-type: none"> • are well understood. • are derived from standard, non-complex or routine operations familiar to Woodside. • there are clearly defined regulatory, corporate or industry (good practice) controls to manage the impact or risk. • have no concerns or objections from relevant stakeholders. • have a ‘severity level’ for planned operations (impacts) and unplanned events (risks) that does not exceed ‘2’ based upon the severity level definition (Table 7-3) • have a ‘likelihood’ for unplanned events that is either ‘unlikely’ or ‘highly unlikely’ based upon the likelihood definitions (Table 7-4).
Decision Type B	Woodside considers higher-order (or ‘Type B’) impacts or risks as those that: <ul style="list-style-type: none"> • are not well understood or there is some uncertainty. • are derived from complex operations not routinely performed by Woodside. • have regulatory, corporate or industry (good practice) controls that require additional definition or validation. • have had some concerns or objections raised by relevant stakeholders. • have a ‘severity level’ for planned operations (impacts) and unplanned events (risks) that is ‘3’ based upon the Woodside severity level definition (Table 7-3) • have a ‘likelihood’ for unplanned events that is considered ‘probable’ to ‘highly likely’ based upon the Woodside likelihood definitions (Table 7-4).
Decision Type C	Woodside considers highest-order (or ‘Type C’) impacts or risks as those that: <ul style="list-style-type: none"> • are not understood or there is a high degree of uncertainty. • are derived from operations not previously performed by Woodside. • have corporate or industry (good practice) controls that either do not exist or are insufficient to manage impacts or risks. • have had multiple concerns or objections raised by relevant stakeholders or lobby groups. • have a ‘severity level’ for planned operations (impacts) and unplanned events (risks) that is equal to or exceeds ‘4’ based upon the Woodside severity level definition (Table 7-3) • have a ‘likelihood’ for unplanned events that is considered ‘probable’ to ‘highly likely’ based upon the Woodside likelihood definitions (Table 7-4).

7.1.2 Environmental Impact Analysis

The environmental impact analysis is based on the environmental receptors identified in **Section 5**. Impact and risk descriptions are developed in an initial screening process that identifies the specific receptor that may be impacted. Quantitative or qualitative definition of the impact and risk may be completed to ensure an understanding of and to confirm the severity of the risk and impact.

7.1.3 Planned Activity Assessment

All planned activities were assessed as being a routine impact and defined as such in the ENVID. The description and degree of impact formed the basis for the severity rating applied, with a quantitative assessment of impact conducted where possible to ensure the impact was well understood and clearly categorised on the severity table. Where this was not possible, a robust qualitative assessment was completed and the severity rating assigned during the ENVID process in accordance with the Woodside (PetDW) HSE Risk Matrix, which is consistent with the Risk Management Severity Table (**Table 7-3**), taking into account any of the mitigative controls assigned. Given routine operations are planned, and impacts are mitigated by applying control measures, likelihood or residual risk ratings were not applied.

7.1.4 Unplanned Event Risk Assessment

Risk ranking of an unplanned event is the product of the consequence of an event (the severity) and the likelihood of that event occurring.

No credible unplanned events were identified that could credibly arise from the petroleum activities considered in this EP. The unplanned event risk assessment process described here is retained for context only.

Likelihood and potential severity ratings were assigned in accordance with the Woodside (PetDW) HSE Risk Matrix (**Table 7-2**, **Table 7-3** and **Table 7-4**), which allowed the risk of individual events to be categorised in a methodical and structured process. This was completed based upon judgement by the ENVID assessment team, with detailed potential impact descriptions used to ensure a robust and comprehensive decision.

The likelihood rating was based on the frequency of the source of hazard actually occurring with all preventative controls taken into consideration. The potential severity rating was determined based on the potential impact that may occur once the source of hazard had occurred, considering any mitigative controls in place to reduce the impact.

Table 7-2: Woodside (PetDW) HSE risk matrix

Likelihood (multipliers in brackets)	Severity Level (multipliers in brackets)				
	1 (10)	2 (30)	3 (100)	4 (300)	5 (1,000)
Highly Likely (3)	30	90	300	900	3,000
Likely (1)	10	30	100	300	1,000
Probable (0.3)	3	9	30	90	300
Unlikely (0.1)	1	3	10	30	100
Highly Unlikely (0.03)	0.3	0.9	3	9	30

Table 7-3: Woodside (PetDW) severity level definitions

Severity	Severity Factor	Descriptor
5	1,000	<ul style="list-style-type: none"> Severe impacts to the environment and where recovery of ecosystem function takes 10 years or more, or Severe impact on community lasting more than 12 months or a substantiated human rights violation impacting 6 or more people
4	300	<ul style="list-style-type: none"> Serious impacts to the environment, where recovery of ecosystem function takes between 3 and up to 10 years, or Serious impact on community lasting 6-12 months or a substantiated human rights violation impacting 1-5 persons
3	100	<ul style="list-style-type: none"> Substantial impacts to the environment, where recovery of ecosystem function takes between 1 and up to 3 years, or Substantial impact on the community lasting 2-6 months
2	30	<ul style="list-style-type: none"> Measurable but limited impacts to the environment, where recovery of ecosystem function takes less than 1 year, or Measurable but limited community impacts lasting less than one month
1	10	<ul style="list-style-type: none"> Minor, temporary impacts to the environment, where the ecosystem recovers with little intervention, or Minor, temporary community impacts that recovers with little intervention

Table 7-4: Woodside (PetDW) likelihood definitions

Uncertainty	Frequency	Likelihood Factor
Highly Likely	Likely to occur within a 1-year period	3
Likely	Likely to occur within a 1 – 5-year period	1
Probable	Likely to occur within a 5 – 20-year period	0.3
Unlikely	Likely to occur within a 20 – 50-year period	0.1
Highly Unlikely	Not likely to occur within a 50-year period	0.03

7.2 Demonstration of As Low As Reasonably Practicable

Regulation 34(b) of the Environment Regulations requires demonstration that the environmental impacts and risks of the activity will be reduced to ALARP.

7.2.1 Planned Activity and Unplanned Event ALARP Evaluation

This section details the process for demonstrating ALARP for both planned routine operations and unplanned events. **Table 7-5** provides a description on how Woodside demonstrates different impacts and risks are ALARP based on the decision types.

Table 7-5: Summary of the criteria used for ALARP demonstration.

Decision Type	Demonstration of ALARP Description
Decision Type A	<ul style="list-style-type: none"> Identified regulatory, corporate and industry good practice controls are implemented, Woodside considers the impact or risk to be managed to ALARP and no further detailed engineering evaluation of controls is required. The application of feasible and readily implementable alternate, additional or improved controls may be adopted opportunistically when demonstrated to further reduce potential environmental impacts or risks.
Decision Type B	<ul style="list-style-type: none"> In addition to relevant regulatory, corporate and industry good practice controls being implemented, alternate, additional or improved controls should be proposed and evaluated according to their feasibility, reasonableness and practicability to implement to further reduce the potential for impacts and risks associated with the petroleum activity. Woodside applies a cost and benefit analysis when evaluating additional controls and applies those that are both feasible and where the cost (safety, time, effort and financial) are not grossly disproportionate to the potential reduction in environmental impact or risk afforded by the control.
Decision Type C	<ul style="list-style-type: none"> Alternate, additional or improved controls over and above relevant regulatory, corporate and industry good practice must be proposed and evaluated based upon a precautionary approach. Woodside ensures all feasible controls that have the potential to reduce environmental impacts and risks are implemented, when safe to do so and irrespective of the additional effort, time or financial cost associated with implementing the control.

When evaluating additional controls for 'Type B' and 'Type C' impacts and risks, Woodside has applied the hierarchy of controls as defined below and illustrated in **Figure 7-2**:

- Eliminate – Remove the source preventing the impact; in other words, eliminate the hazard.
- Substitution – Replace the source preventing the impact.
- Engineer – Introduce engineering controls to prevent or control the source having an impact.
- Separate – Separate the source from the receptor preventing impact.
- Administrate – Procedures, competency and training implemented to minimise the source causing an impact.
- Pollution Control – Implement a pollution control system to reduce the impact.
- Contingency Planning – Mitigate control reducing the impact.
- Monitor – Program or system used to monitor the impact over time.

The general preference is to accept controls that are ranked in the Tier 1 categories of Eliminate, Substitute, Engineer and Separate as these controls provide a preventive means of reducing the likelihood of the hazard occurring over and above Tier 2 controls.

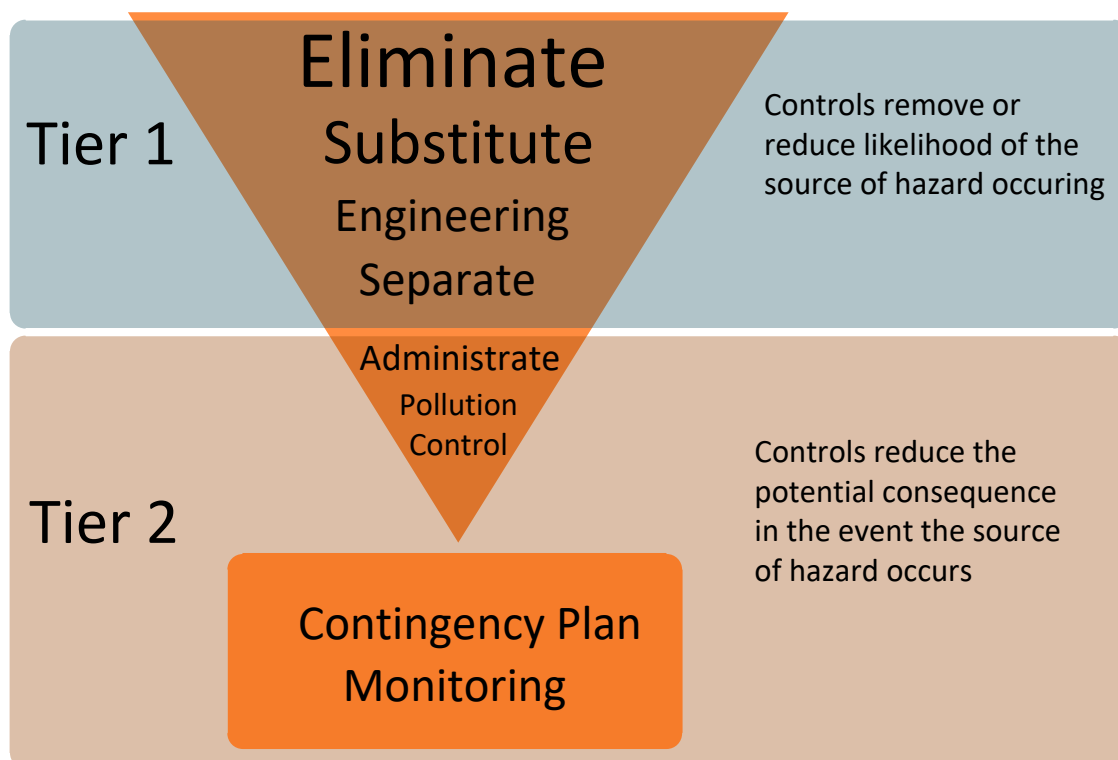


Figure 7-2: Hierarchy of control framework

7.3 Demonstration of Acceptability

Regulation 34(c) of the Environment Regulations requires demonstration that the environmental impacts and risks of the activity will be of an acceptable (tolerable) level.

The demonstration of acceptability is completed independently of the ALARP evaluation described above. However, as with the demonstration of ALARP, the demonstration of acceptability detailed below applies the decision-making principles described in **Section 7.1.1**, ensuring consistency with the precautionary principle when considering the acceptable levels of impact and risk caused by the activity.

7.3.1 Demonstrating Acceptability for Lower-order ('Type A') and Higher-order ('Type B') Impacts or Risks

When an impact or risk has been evaluated as 'lower-order' or 'higher-order' based upon the Decision Context detailed in **Section 7.1.1**, acceptability of the impact or risk is evaluated based upon the following criteria:

- Relevant regulatory, corporate and industry good practice controls have been identified and implemented, including consideration of relevant actions prescribed in recovery plans and approved conservation.
- The activity does not contravene any relevant Plan of Management for a World Heritage place, National Heritage place or Ramsar wetland identified within the EMBA.
- Any alternate, additional or improved controls adopted via the detailed engineering risk assessment have been or will be implemented to manage potential impacts and risks to ALARP.
- There are either no objections or claims made by relevant stakeholders for the aspect of the activity being assessed, or any objections or claims received from relevant stakeholders are assessed for merit and controls adopted to address the objections or claims where merited.
- Where industry good practice cannot be adopted, professional judgement made by subject matter experts have been used to evaluate the acceptability of potential environmental impact or risk based

upon adoption of alternate, additional or improved controls identified during detailed engineering risk assessment.

- Consideration of relevant actions prescribed in listed species recovery plans, conservation advice and threat abatement plans have informed the development of control measures.
- The application of adopted controls clearly indicates the aspect-specific EPOs can be achieved.
- The proposed impact is consistent with the principles of ESD defined in Section 3A of the EPBC Act (**Section 2.2.2**), including:
 - Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations (the ‘integration principle’)
 - If there are threat of serious or irreversible damage lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation (the ‘precautionary principle’)
 - The principle of intergenerational equity- that the present generation should ensure the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations (the ‘intergenerational principle’)
 - The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision making (‘the biodiversity principle’).

In addition to the criteria above, given the environmental management approach adopted within this EP is consistent with both the AEP’s Principles of Conduct and Woodside Our Values, PetDW HSE Standard (PET-HSE00-HX-STD-00001) and HSE Management Systems, which endorse and promote continuous improvement in ways that protect people and the environment through the responsible management of petroleum activity and their impacts, Woodside considers that adherence to these principles, standards and systems aligns with the principles of ESD. Therefore, any deviation from these principles, standards and systems must be evaluated to ensure the potential environmental impacts and risks remain acceptable.

7.3.2 Demonstrating Acceptability for Highest-order (‘Type C’) Impacts or Risks

When an impact or risk has been evaluated as ‘highest-order’ based upon the Decision Context detailed in **Section 7.1.1**, the potential environmental impact or risk can only be deemed acceptable once the criteria for ‘Type B’ demonstration of acceptability detailed above has been met and:

- any alternate, additional or improved controls adopted via implementing a precautionary approach (consistent with the ‘Precautionary Principle’ as defined within Section 3A of the EPBC Act) can demonstrate residual impacts have been lowered, such that a severity level of ‘4’ becomes ‘unlikely’ or the severity level of ‘5’ becomes ‘highly unlikely’ based upon the Risk Matrix (**Table 7-2**).

7.4 Environmental Performance Outcomes, Environmental Performance Standards and Measurement Criteria

Regulation 34(d) of the Environment Regulations requires the EP provides appropriate EPOs, environmental performance standards (EPSs) and measurement criteria (MC).

An objective of the EP is to ensure all activities are performed in accordance with appropriate EPSs, thus ensuring EPOs are achieved. This requires (among other things) appropriate measurement criteria for demonstrating the EPSs have been met as defined within the EP.

Establishing EPOs and EPSs involves a process of considering legal requirements and the environmental risks and considering available control options (**Sections 8**) and the views of relevant persons (**Section 6**). The resulting outcomes and standards must be measurable where practicable and consistent with Our Values (**Appendix A**) and Environment and Biodiversity Policy (**Appendix B**).

7.4.1 Environmental Performance Outcomes

EPOs are developed to ensure protection of the environment from the impact or risk and to ensure ongoing performance and measurability of the controls. These were developed using the below criteria:

- Be specific to the source of the hazard.
- Indicate how the environmental impact will be managed (for example, minimise or prevent).
- Contain a statement of measurable performance (where applicable).
- Contain a timeframe for action (where applicable).
- Be consistent with legislative and HSE requirements.

7.4.2 Environmental Performance Standards

An EPS is a statement of performance required from a control measure (a system, an item of equipment, a procedure or functional responsibility (person)), which is used as a basis for managing environmental impact and risk, for the duration of the activity.

There is a specific link between the EPOs, the EPSs and control measures; each EPO has one or more standards defining the performance requirement that needs to be met by a control measure to meet the EPO.

EPSs detailed within this EP are specific, measurable, and achievable.

7.4.3 Environmental Measurement Criteria

MCs have been assigned for each EPS as a means of validating that each EPO and EPS will be or has been met throughout the duration of the petroleum activity, thus continually reducing environmental impacts and risks to ALARP and acceptable levels.

All MCs are designed to be inspected or audited via compliance assurance activities and enable a traceable record of performance to be maintained.

EPOs, EPSs, and MCs, both in relation to planned activities and unplanned events, have been detailed throughout **Section 8** and have been consolidated in the Environmental Performance section of this EP.

8 Environmental Impact Assessment and Evaluation: Planned Activities

The purpose of this section is to address the requirements of Regulations 21(5) and 21(6) of the Environment Regulations by assessing and evaluating all the identified impacts and risks associated with the petroleum activity and associated control measures that will be applied to reduce the impacts and risks to an ALARP and an acceptable level.

Table 8-1 summarises the impact analysis for the aspects associated with the planned activities. A comprehensive risk and impact assessment for each of the planned activities, and subsequent control measures proposed by Woodside to reduce the impacts and risks to ALARP and acceptable levels, are detailed in the subsections.

Table 8-1: Summary of the environmental impact analysis for planned activities

Aspect	Environmental										Socio-economic			Risk Assessment and Evaluation			
	Marine Mammals	Marine Turtles	Fish	Seabirds / Shorebirds	Seabed	Water Quality	Air Quality	Marine Protected Areas	Key Ecological Features	Commercial Fisheries	Shipping	Tourism / Recreation	Severity Factor	Likelihood Factor	Residual Risk	Acceptability	
Physical Presence – Section 8.1																	
Equipment decommissioned <i>in situ</i>										x	x		10	N/A	-	Tolerable	
Equipment Degradation – Section 8.2																	
Equipment decommissioned <i>in situ</i>			x		x	x			x				10	N/A	-	Tolerable	
Alteration of seabed and benthic habitats – Section 8.3																	
Equipment decommissioned <i>in situ</i>					x								10	N/A			

8.1 Physical Presence – Interaction with Other Marine Users (Planned and Unplanned)

8.1.1 Summary of Risk Assessment and Evaluation

Aspect	Source of Hazard	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Physical presence	Presence of subsea infrastructure	Interaction with or displacement of other marine users (such as commercial fishing, commercial shipping and potential future users).	10	N/A	-	Type A Low Order Impact	Tolerable

8.1.2 Source of Hazard

The subsea equipment listed in **Table 4-3** will be decommissioned *in situ*, with all other equipment removed from the seabed. The equipment decommissioned *in situ* is buried within the seabed:

- The nine DTM mooring anchors and residual chain are buried within the seabed.
- The nine suction piles used to anchor the risers are predominantly buried within the seabed.
- The suction pile used as a foundation for the water injection manifold, predominantly buried within the seabed.
- The Eskdale-1 wellhead.

The anchors are buried within the sediment, with the exposed chain will be cut at or below the mudline as close as practicable to the anchor.. The suction piles for the riser holdback anchors and water injection manifold are mostly buried with a minor protrusion of equipment (0.75–1 m) above the seabed. The wellhead extends approximately between 2 m and 3 m above the seabed.

The equipment decommissioned *in situ* will degrade over time, eventually becoming indistinguishable from the surrounding sediments. This process will take hundreds to thousands of years. Inspections to date (**Section 4.8**) indicate that the corrosion prevention systems on the equipment to be decommissioned *in situ* are in good order. Based on degradation studies for the Griffin field (Atteris, 2019) the corrosion prevention systems, such as coatings and sacrificial anodes, will continue to function for decades. Corrosion of the steel will substantially increase following failure of the corrosion prevention systems.

Parts of the equipment that extend above the seabed (e.g., the Eskdale-1 wellhead and the tops of suction piles) will corrode relatively quickly due to the higher availability of oxygen in the water column compared to the parts of the equipment buried in the seabed. As the parts of the equipment above the seabed corrode to the point where structural integrity fails, they will slump to the seabed due to their weight, where they will gradually become buried over time through natural sedimentary processes. The wellhead will sink within the muddy sediments once it collapses. The timeframes for these corrosion and degradation processes will be in the order of hundreds of years.

The presence of the equipment decommissioned *in situ* on the seabed may interact with other users of the sea, particularly trawled fishing gear. There are currently no active demersal or benthic trawl fisheries active in the EMBA.

8.1.3 Environmental Impact Assessment

8.1.3.1 Other Marine Users

Commercial Fishing

The long-term physical presence of equipment on the seabed may result in interactions with trawl fishing gear. Snagging of trawled gear on subsea equipment has resulted in disruption to fishing operations and financial loss through loss of catch or damage to fishing equipment. Vessel damage or loss has occurred in less than 0.5% of snagging events and one vessel capsized in the UK between 1989 and 2016 (Rouse et al., 2020), however capsizing may occur during attempts to release the snag. Most of the interactions analysed by Rouse et al. (2020) were between trawled gear and subsea equipment involved hydrocarbon pipelines. Equipment that is buried in the seabed with little or no protrusion above the seabed poses relatively little risk of snagging trawled fishing gear.

The wellhead poses the greatest risk of interaction with trawled fishing gear due to the height it extends above the seabed (between approximately 2 m and 3 m). The tops of the suction piles also pose a risk of interaction with trawled fishing gear; however, this risk is lower as they do not extend above the seabed to the same extent as the wellhead. The anchors and much of the suction piles and wellhead are buried within the seabed. Buried equipment (or parts of equipment) does not pose a credible risk of interaction with trawled fishing gear.

Several managed fishery boundaries overlap the EMBA, each of which is described in **Table 5-6**. None of these fisheries are currently active, or have historically been active, in the EMBA. Of the fisheries described in **Table 5-6**, only the Western Deep Water Trawl Fishery uses trawled gear which may interact with the equipment in WA-32-L. Effort in this fishery is concentrated off the central west coast, with Carnarvon and Fremantle the major landing ports. The primary species landed by the western deepwater trawl fishery occur in waters substantially shallower than the Stybarrow field:

- red snapper (*Etelis* spp.) approximately 30-300 m water depth (Allen, 1985)
- deepwater bugs (*Ibacus* spp.) < 650 m water depth (Holthuis, 1991)

Environmental surveys in WA-32-L did not observe these species. On this basis, participants in the Western Deepwater Trawl Fishery will not credibly fish in the vicinity of equipment decommissioned *in situ*, as the water depths far exceed the distribution of target species. Demersal or benthic biological resources that may be exploited by trawl fishers in the future were not observed within the Stybarrow field, hence trawl fishing is not expected to be viable within the vicinity of equipment decommissioned *in situ* in the future.

Crystal crabs (*Chaceon albus*) targeted by the West Coast Deep Sea Crustacean may occur within the depth range of the Stybarrow field, however the other non-target species retained by this fishery are distributed in shallower waters. The West Coast Deep Sea Crustacean fishery is a trap-based fishery that is permitted to operate over the Stybarrow field. Traps have a much lower potential for interaction with equipment decommissioned *in situ*, as they are not dragged across the seabed. The consequences of interaction are less than for trawled fishing gear (typically the loss of a single trap compared to the loss of a net). While the target species for the West Coast Deep Sea Crustacean fishery depth range overlaps the equipment that will be decommissioned *in situ* and the fishery is permitted to operate within the Stybarrow field, fishing effort to date is concentrated off the central west coast between Shark Bay and the Abrolhos Islands (**Figure 8-1**), several hundred kilometres from the equipment that will be decommissioned *in situ*. Based on the historical fishing effort and the gear type used in the West Coast Deep Sea Crustacean Fishery, participants in the fishery will not credibly have interactions with the equipment decommissioned *in situ*.

The Environmental Impact Assessment and Evaluation regarding First Nations cultural features and heritage values is addressed in Section 8.4.

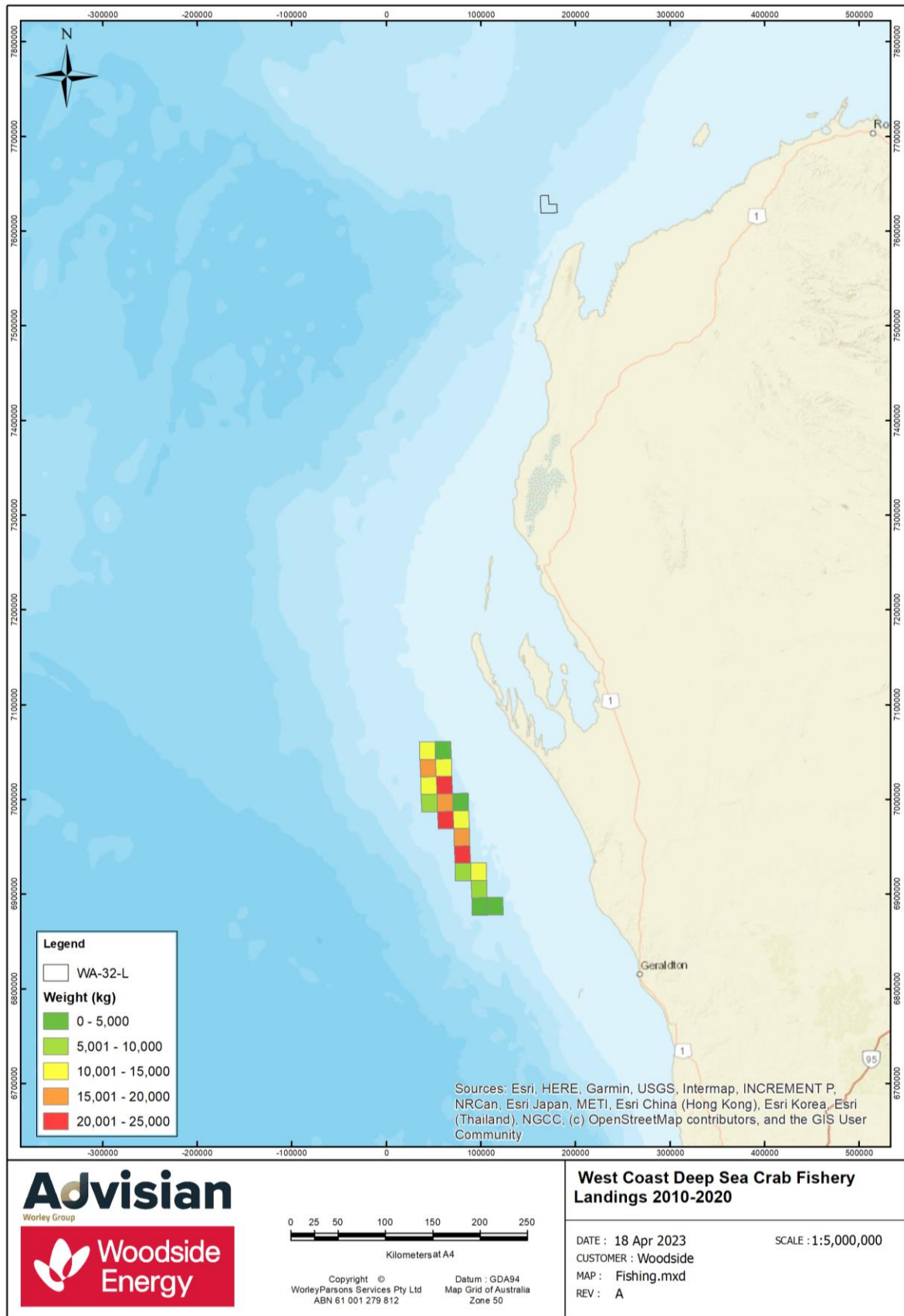


Figure 8-1: West Coast Deep Sea Crustacean Fishery landings between 2010 and 2020 (based on FishCube data supplied by Department of Primary Industries and Regional Development)

Commercial fishing vessels are equipped with navigational equipment such as echo sounders and geographical positioning system (GPS) plotters, which enables them to avoid charted infrastructure on the seabed. The likelihood of interactions between trawl equipment and oil and gas infrastructure has been reducing over time as a result of an increase in communication between the oil and gas industry and improvement in fishery GPS equipment (Rouse et al., 2020). Historical fishing vessel incident data from the AMSA Monthly Domestic Vessel Incident Reporting Database (2018-2021) and the Australian Transport Safety Bureau (ATSB) Marine Safety Investigation reports show there were no reported fishing vessel incidents related to offshore oil and gas infrastructure in Australia.

Interaction of the infrastructure with future commercial trawling fisheries is highly unlikely, based on historical information on vessel incidents related to oil and gas infrastructure in Australia, likely improvements in GPS fishing equipment in the future and likely improved communication, operation and coexistence between oil and gas industry and the commercial fishing industry (Rouse et al., 2020). In addition, Woodside have previously engaged the Australian Maritime College (AMC) to undertake an independent study of the Thebe-1 wellhead *in situ* (AMC, 2022) and although some parameters are different, results indicated that during an 'interaction event,' provided the skipper of a trawl vessel adhere to hook-up guidelines issues by AMSA the risk of harm to vessel and crew would remain low. The impact to commercial fishing activity (should trawling resume) from the presence of the infrastructure on the seabed is considered negligible.

Woodside have consulted with fishing industry bodies, WAFIC and individual fishing licence holders (see **Section 6**). WAFIC objected to the decommissioning *in situ* of equipment coated with epoxy paint. Woodside responded to WAFIC's objections, stating that Woodside determined that the environmental outcomes of leaving equipment with some epoxy coatings yields better environmental outcomes than removal due to the burial status of the equipment and the environmental impacts of removal activities. Details of consultation with WAFIC are provided in **Appendix F**.

Given the negligible commercial fishing effort to date, the burial status of the equipment, and the absence of commercially important species in WA-32-L, no displacement of commercial fishers or interactions with fishing gear are expected.

Commercial Shipping

The equipment proposed to be decommissioned *in situ* is too deep to pose a risk to commercial shipping. None of the equipment is buoyant, and hence there are no credible hazards to commercial shipping.

Other Future Users

The infrastructure that is proposed to be decommissioned *in situ* is not expected to displace other future marine users, such as renewable energy or offshore petroleum operators, from using the area in the future. This is on the basis that all infrastructure is planned to mostly be buried or cut below the mudline with only the Eskdale-1 wellhead and the tops of the suction piles extending a relatively small distance above the seabed. Equipment decommissioned *in situ* will be marked on navigation charts giving future users the ability to avoid equipment if required.

8.1.4 Demonstration of As Low As Reasonably Practicable

The ALARP process performed for the environmental aspect is summarised in **Table 8-2**. This process was completed as outlined in **Section 7.2** and included consideration of all controls, analysis of the risk reduction proportional to the benefit gained, and final acceptance or justification if the control was rejected.

Table 8-2: Physical presence - as low as reasonably practicable summary

Control Measure	Accept / Reject	Reason	Associated Performance Standards
Legislation, Codes and Standards			
Compliance with <i>Environmental Protection (Sea Dumping) Act 1981</i>	Accept	Control is based on a legislative requirement therefore must be adopted.	PS 1.1
Eliminate			
Remove equipment	Reject	Removal of the equipment, which is buried in the seabed, would involve substantial environmental disturbance. The decommissioning alternatives environmental impact assessment (Section 3) demonstrates that decommissioning <i>in situ</i> of the anchors and suction piles results in equal or better environmental outcomes compared to removal.	-
Engineer			
Install trawl protection structures over the equipment decommissioned <i>in situ</i>	Reject	Given the absence of trawl fishing and the burial status of the equipment decommissioned <i>in situ</i> , the installation of trawl protection would result in no reduction of the risk of trawled fishing gear being snagged. The installation of trawl protection equipment would introduce additional manmade materials to the marine environment.	-
Administrate			
Provide infrastructure details for on navigation charts	Accept	Legislative requirements to be followed which reduces the risk of third-party vessel interactions. Subsea infrastructure charting on AHO nautical charts allows other users to be aware of its presence. Control is feasible, standard practice with minimal cost. Benefits outweigh cost sacrifice.	PS 1.2
Consultation with relevant stakeholders	Accept	Controls based on Woodside requirements must be accepted. Control ensures other users are informed and aware of the petroleum activity, thereby reducing the likelihood of interference. Control is feasible, standard practice with minimal cost. Benefits outweigh cost sacrifice.	PS 1.3
Monitor			

Control Measure	Accept / Reject	Reason	Associated Performance Standards
As-left survey to verify mooring anchors and residual chains, suction piles and Eskdale-1 wellhead location, burial status, and condition.	Accept	As left surveys will be completed for the mooring anchors and residual chains, suction piles, and Eskdale-1 wellhead to confirm location, current condition and burial status. The as left survey activity will be conducted under the accepted Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003).	PS 1.4
Monitoring and/or remediation to make good any damage to the seabed or subsoil and provide for conservation and protection of the natural resources in the area of the subsea infrastructure left <i>in situ</i> .	Reject	<p>Physical impacts to the seabed and subsoil from the ongoing presence of the subsea infrastructure are limited to localised scouring and accretion and habitat creation, which will have a negligible impact to benthic habitats within an estimated 10 m around the individual infrastructure.</p> <p>Impacts to benthic habitats from previous installation and operational activities at the Stybarrow field will be assessed as part of the Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003) to address Section 270 and title relinquishment requirements.</p> <p>The impacts associated with ongoing physical presence of proposed subsea infrastructure do not represent an unacceptable damage to the seabed or subsoil and allow for the conservation and protection of the natural resources in the area. Therefore, there is no benefit gained from further monitoring or remediation of the seabed in the localised vicinity surrounding this infrastructure.</p> <p>Cost of the control is disproportionate to the benefit that may be gained from it given impacts to the seabed have been assessed as negligible.</p>	-

8.1.4.1 ALARP Summary

The risk assessment and evaluation has identified a range of controls (**Table 8-2**) appropriate to the decision type (Decision Type A) that, when implemented, are considered to manage the impacts of the physical presence of equipment decommissioned *in situ* on other marine users and benthic habitats to ALARP.

Woodside considers the control measures described above are appropriate to reduce the potential for interaction with other marine users and impacts to benthic habitats associated with the physical presence of equipment decommissioned *in situ*. Additional reasonable control measures were identified in **Table 8-2** to further reduce impacts but rejected since the associated cost or sacrifice was grossly disproportionate to any benefit. The impacts are therefore considered reduced to ALARP.

8.1.5 Demonstration of Acceptability

Given the adopted controls, the physical presence of equipment decommissioned *in situ* will not result in potential impacts greater than temporary and minor displacement of commercial fisheries and a minor severity impact to benthic habitats. Further opportunities to reduce the impacts have been investigated in **Table 8-2**.

Further opportunities to reduce the impacts have been investigated above. The adopted controls are considered good oil-field practice/industry best practice. WAFIC objected to leaving equipment with epoxy paint *in situ*, such as the suction piles, during consultation. Woodside has responded to WAFIC affirming that decommissioning *in situ* yields the best environmental outcome for the suction piles (**Section 3.2.3**). The impact is consistent with the principles of ESD (as defined under the EPBC Act). Woodside has considered information contained in recovery plans and threat abatement plans (**Section 8.3**). The environmental impacts meet the Woodside (PetDW) environmental risk acceptability criteria (**Section 7.3**). On this basis, Woodside considers the impact to be managed to an acceptable level.

The following subsections provide further detail on the determination of acceptability for the physical presence of the subsea infrastructure left *in situ*.

8.1.5.1 Principles of ESD

Demonstrations of alignment of the petroleum activity with the principles of ESD for the DTM anchors and residual chains, suction piles and Eskdale-1 wellhead are provided in **Table 3-6**, **Table 3-11** and **Table 3-16** respectively.

8.1.5.2 Monitoring to meet the Requirements of General Direction 833

Whilst ongoing monitoring has been determined not to be required based on the ALARP assessment and the acceptability of the impact from the subsea contamination, a single ROV survey will be undertaken on the subsea equipment decommissioned *in situ*. Footage will be provided to NOPSEMA to meet the requirements of NOPSEMA General Direction (832), which requires:

'Provide, to the satisfaction of NOPSEMA, for the conservation and protection of the natural resources in the title areas within 12 months after property referred to in direction 1 is removed'

and

'Make good, to the satisfaction of NOPSEMA, any damage to the seabed or subsoil in the title areas caused by any person engaged or concerned in the operations authorised by the titles within 12 months after property referred to in direction 1 is removed'

An as left survey of the infrastructure left *in situ* is covered under the accepted Stybarrow Decommissioning and Field Management EP ((BHPB-00SC-N000-0003)).

8.1.5.3 Annex I(2) of the 1996 London Protocol

Annex I(2) of the 1996 London Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Waste and Other Matter (update to London Convention and Protocol 1972) describes that material capable of creating floating debris or otherwise contributes to the pollution of the marine environment has to be removed.

The anchors and residual chains, suction piles and Eskdale-1 wellhead are buried or buried in the seabed and negatively buoyant. It is not credible that degradation of this equipment will create floating debris. The petroleum activity is therefore not inconsistent with Annex I(2) of the 1996 London Protocol.

8.1.5.4 Article 192 of the United Nations Convention on the Law of the Sea

International Maritime Organization (IMO) Resolution A.672 provides that the general requirement is removal with the objective of protecting and preserving the marine environment. Section 3 of the resolution presents standards for alternatives to removal, including:

- Equipment in < 75 m water depth and < 4,000 tonnes in air should be removed.
- Equipment abandoned *in situ* should remain on location and not move under the influence of waves, tides, currents, storms, or other foreseeable natural causes.

The equipment proposed to be decommissioned *in situ* satisfies the requirements of IMO Resolution A.672. The petroleum activity is therefore not inconsistent with IMO Resolution A.672.

8.1.6 Environmental Performance Outcome, Performance Standards and Measurement Criteria

Environmental Performance Outcome	Controls	Performance Standard	Measurement Criteria
EPO 1 Prevent adverse interactions with other marine users from equipment decommissioned <i>in situ</i>	C 1.1 Compliance with <i>Environmental Protection (Sea Dumping) Act 1981</i>	PS 1.1 Woodside continues to engage with DCCEEW regarding the application of the <i>Environment Protection (Sea Dumping) Act 1981</i> and to comply with requirements under the Act.	MC 1.1.1 Records demonstrate DCCEEW continue to be engaged on the application of the <i>Environment Protection (Sea Dumping) Act 1981</i> relevant to the petroleum activity and demonstrate Woodside's commitment to complying with the Act.
	C 1.2 Provide infrastructure details for inclusion on navigation charts	PS 1.2 Notify AHO of mooring anchors and residual chains, suction piles and Eskdale-1 wellhead remaining <i>in situ</i> so they can continue to be marked on navigation charts	MC 1.2.1 Records demonstrate AHO has been notified that the mooring anchors and residual chains, suction piles and Eskdale-1 wellhead will remain <i>in situ</i> .
	C 1.3 Consultation with relevant stakeholders	PS 1.3 Woodside consultation with relevant stakeholders to advise them of the location of equipment remaining <i>in situ</i> .	PS 1.3.1 Stakeholder communication recorded in database demonstrating Woodside has provided relevant persons with the location of equipment decommissioned <i>in situ</i> .
	C 1.4 Confirm mooring anchors and residual chains, suction piles and Eskdale-1 wellhead location, burial status, and condition.	PS 1.4 Woodside will undertake as-left surveys of the mooring anchors and residual chains, suction piles, and Eskdale-1 wellhead to confirm location, burial status, and condition.	MC.1.4.1 Records demonstrate as-left surveys of the mooring anchors and residual chains, suction piles and Eskdale-1 wellhead completed.

8.2 Physical Presence – Equipment Degradation

8.2.1 Summary of Risk Assessment and Evaluation

Aspect	Source of Hazard	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Equipment degradation	Equipment decommissioned <i>in situ</i>	Localised increased concentrations of degradation products in sediments.	10	N/A	-	Type A Low Order Impact	Tolerable

8.2.2 Source of Hazard

8.2.2.1 Equipment Decommissioned *In Situ*

Corrosion and breakdown of equipment decommissioned *in situ* over time will release materials to the marine environment. The mooring anchors and residual chains, suction piles and wellhead are made of steel. The suction piles are partially coated with epoxy paint for corrosion protection. The Eskdale-1 wellhead has very small amounts of nitrile rubber in seals, expected to be <3 kg. Steel will contain trace amounts of alloying materials, with concentrations of these derived from a materials analysis provided in Table 8-3.

Table 8-3: Indicative percentage composition of alloying materials in wellhead steel

Alloying Material	Percentage Composition (%)
Manganese (Mn)	0.5470
Carbon (C)	0.1712
Chromium (Cr)	0.0897
Silicon (Si)	0.0540
Copper (Cu)	0.0499
(Nb) + (V) + (Ti)	0.0427
Nickel (Ni)	0.0402
Molybdenum (Mo)	0.0203
Phosphorus (P)	0.0121
Sulfur (S)	0.0117
Vanadium (V)	0.0026
Nitrogen (N)	0.0012
Calcium (Ca)	0.0004
Niobium (Nb)	0.0004

Concentrations of alloying materials in steel derived from a materials analysis for a suction pile provided in **Table 8-4**. Given the mass of steel in a suction pile is greater than the Eskdale-1 wellhead and percentages of alloying metals are lower; impacts are considered to be similar, and the degradation of the suction pile is presented for the purposes of this assessment. Of the alloying materials listed in **Table 8-4**, only three have established guideline values for toxicity in marine sediments in the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (Commonwealth of Australia and New Zealand Government, 2018):

- Copper (0.14% of steel composition)
- Chromium (0.10% of steel composition)
- Nickel (0.06% of steel composition)

Each of these metals only occurs in trace amounts as alloying material. The absence of default guideline values for most of the alloying materials in **Table 8-4** does not indicate they have no potential for toxicity. However, the evidence-based approach used to develop the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (Commonwealth of Australia and New Zealand Government, 2018) indicates that these materials pose negligible environmental risk at the concentrations found in the steel alloy.

The alloying materials in the anchor ground chain are assumed to be manganese, carbon, phosphorus, and sulphur (Section 4.8.1); none of these have default guideline values established by the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (Commonwealth of Australia and New Zealand Government, 2018).

Table 8-4: Indicative percentage composition of alloying materials in suction pile low carbon steel

Alloying Material	Percentage Composition (%)	Default Guideline Value (DGV) (mg/kg)	High Guideline Value (GV-High) (mg/kg)
Manganese	1.23	No guideline	No guideline
Cerium	0.42	No guideline	No guideline
Silicon	0.25	No guideline	No guideline
Carbon	0.18	No guideline	No guideline
Copper	0.14	65	270
Chromium	0.10	80	370
Nickel	0.06	21	52
Aluminium	0.052	No guideline	No guideline
Molybdenum	0.02	No guideline	No guideline
Phosphorus	0.018	No guideline	No guideline
Sulphur	0.017	No guideline	No guideline
Niobium	0.002	No guideline	No guideline
Titanium	0.002	No guideline	No guideline
Boron	0.0004	No guideline	No guideline
Vanadium	0.000	No guideline	No guideline

As shown in **Figure 4-6**, the piles are approximately 7.5 m long and buried to a depth of 6.5 m (i.e., > 85% buried). Consequently, the majority of the degradation products will be buried and unlikely to be available to fauna. Fauna such as demersal fishes, epifauna and infauna will only be exposed to degradation products on the seabed or within the layer of sediment that may be reworked through bioturbation (primarily through infauna burrowing and deposit feeding). Bioturbation is typically concentrated in the upper 30 cm (Kristensen et al., 2012). When considering the exposed tops of the piles (approximately 1 m) and the depth of sediment reworking (0.3 m), only degradation products from the upper 1.3 m of the pile, constituting approximately 27% of a pile's mass (i.e., the pile walls in the upper 30 cm of sediment and the pile top), will credibly come into contact with fauna.

The mass of each suction pile is approximately 207 t. Using this mass, the percentage of each pile that may interact with fauna, and the percentage composition of alloying materials, the estimated mass of metals per suction pile with DGV and GV-High values is:

- copper: approximately 78 kg
- chromium: approximately 56 kg
- nickel: approximately 34 kg.

The bulk density – the mass of dried sediment divided by the volume of wet sediment sampled – of muddy sediments typically ranges from 1.1 to 1.8 t/m³ (Richardson and Jackson, 2017). Bulk density is the appropriate density measurement to compare to the DGV and GV-High thresholds for potential metal toxicants in sediments, as these are expressed as the mass of the contaminant divided by the dry weight of the sediment sample.

Assuming a bulk sediment density of 1.5 t/m³ and the even distribution of degradation products within the top 30 cm of sediment around each pile (due to bioturbation), the maximum volume of sediment within which the DGV and GH-High values for copper, chromium and nickel could be exceeded are summarised in **Table 8-5**. **Table 8-5** also presents the radius of a cylinder with a height of 30 cm for each metal and guideline value. These radii provide context for the distances from the equipment that the DGV and GV-High concentrations for copper, chromium and nickel may be exceeded. With the exception of nickel (which naturally exceeds the DGV), concentrations of metals that exceed the DGV and GH-High will be within a radius of approximately 21 m of the suction piles.

The results presented in **Table 8-5** consider the concentrations of metals reported by Cardno (2019), as well as the mass of metals in degradation products available from the top 1.3 m of the pile. These volume estimates are conservative, as degradation products are unlikely to be evenly distributed; degradation products will be concentrated in the sediments around the equipment, resulting in a lower volume of sediment with higher concentrations of contaminants. This is supported by the concentrations of metals deposited by drilling activities (e.g., barium) declining rapidly with increasing distance from wells (**Figure 5-5**).

Table 8-5: Maximum volumes of sediment and radii in which the DGV and GH-High concentrations may be exceeded.

Metal	Maximum Sediment Volume exceeding DGV (m ³)	Radius at which Maximum Volume Exceeding DGV fills Upper 30 cm of Sediment (m)	Maximum Sediment Volume exceeding GV-High (m ³)	Radius at which Maximum Volume Exceeding GV-High fills Upper 30 cm of Sediment (m)
Copper	1,051	33.4	204	14.7
Chromium	865	30.3	112	10.9
Nickel	N/A – Natural average exceeds DGV	N/A - natural exceedance	787	28.9

The mass of the Eskdale-1 wellhead that may credibly come into contact with fauna (i.e., within and above the upper 30 cm of sediment) is less than the mass of the suction piles. Like the suction piles, the wellhead is made from low carbon steel. Hence the distribution of degradation products from the Eskdale-1 wellhead is assumed to be similar to the suction piles.

The water injection manifold foundation is a suction pile, which is substantially smaller than the riser holdback anchor suction piles. The construction and composition of the water injection manifold foundation are similar to the riser holdback anchor suction piles. Hence the distribution of degradation products from the water injection manifold foundation is assumed to be similar to the suction piles (described in Table 8-5).

The anchors are buried in the soft, muddy sediments and are buried below the sediments that may be re-worked by infauna. The attached chain will be cut as close as practicable to the anchors and removed; < 10 m of ground chain expected to be left in situ. Based on a worst-case of 20 m of chain remaining in situ for each anchor, the total mass of chain decommissioned *in situ* would be approximately 25 t.

The equipment decommissioned *in situ* is largely buried in sediments which have very low levels of oxygen compared to the water column. This will result in relatively slow corrosion degradation due to the limited supply of oxygen. The top sections of the suction piles and the wellhead will be exposed to relatively high levels of oxygen in the water column and hence will degrade more quickly. As described in **Section 8.1.2**, the degradation process is expected to take hundreds to thousands of years.

Up to 3 kg of nitrile rubber (a synthetic rubber compound) is present in the Eskdale-1 wellhead. Degradation of the wellhead over time may also result in the gradual, progressive release of the nitrile rubber as these components slowly become exposed to seawater.

As most of the equipment is buried, the degradation products will be trapped within the sediments surrounding the equipment. The sedimentary environment is depositional (Baker et al., 2008) and hence these buried degradation products will not be mobilised but will remain deposited in the sediment.

Degradation products from the parts of the suction piles and wellhead above the seabed are likely to detach as flakes < 5 cm, which will rapidly fall to the seabed as the density of the degradation products is substantially greater than seawater. The flakes will become buried in the sediment and become buried over time through natural sedimentation. This will result in a localised debris field of degradation products in the upper layer of sediment around the suction piles and wellhead developing over the course of hundreds of years.

Steel degradation will result in rust flaking off the equipment into the surrounding sediments. This process will occur over hundreds to thousands of years for the buried equipment due to the lack of oxygen on sediments. Degradation products from the steel will remain in the immediate area and be incorporated into the seabed due to the significantly higher density than seawater and burial of the equipment.

Some of the equipment to be decommissioned *in situ* has a paint coating as part of the corrosion protection system. The coatings are not anti-fouling coatings and do not contain compounds such as tributyltin or copper-based antifouling compounds. Paint coatings were applied to a thickness of approximately 450 µm.

The entire surfaces of the anchors are not expected to be painted. The majority of the pile surface buried in the seabed, including the entire interior surface of the piles, was not painted in order to enhance friction between the pile and the seabed, resulting in greater holding capacity.

Paint coatings will degrade and be released to the environment as equipment degrades and will be released relatively early in the degradation timeline. Paint flakes are denser than seawater and will become incorporated into the sediment surrounding the equipment.

8.2.3 Environmental Impact Assessment

8.2.3.1 Steel

Degradation products from corrosion of steel will be deposited in the sediments immediately around the equipment. This will occur over a prolonged period of time (hundreds to thousands of years). Iron and carbon, which are over 97% of the low carbon steel used for the suction piles, anchors, and Eskdale-1 wellhead, pose little risk to the environment. Iron (II) and (III) oxides (i.e., rust) are listed by the OSPAR Commission as posing little or no risk to the environment (PLONOR) and an extensive review by Johnson et al. (2007) found no evidence of toxic effects of iron in marine sediments. The *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (Commonwealth of Australia and New Zealand Government, 2018) do not provide trigger values for iron in sediments. Iron is one of the most abundant elements in the Earth's crust.

Degradation products from the upper sections of the suction piles and wellhead will be concentrated around the equipment. The bottom currents in the Stybarrow field are insufficient to remobilise rust that has flaked off equipment (evidenced by sediment disturbance from equipment installation in 2007 being clearly visible during recent inspections and the distribution of drilling contaminants shown in **Figure 5-5**). The release of rust is expected to occur over a period of hundreds of years at the equipment degrades. As a result, the concentrations of degradation products in sediments around the equipment will increase gradually over time until the upper parts of the suction piles and wellhead are degraded. Most of the alloying compounds in the steel are not recognised toxicants, with the exception of copper, chromium and nickel (**Table 8-4**). Alloying compounds represent a very small portion of the total steel mass and will be released over a long period of time.

The sedimentary environment in the Stybarrow field is depositional. Seabed disturbance from installation activities is still clearly visible, which indicates there is little reworking of sediments by bedload sediment transport. Additionally, sediment deposited on equipment is visible in ROV inspection footage, indicating sediment deposition following installation of equipment. The depositional nature of the environment will gradually bury degradation products, making them less readily available to environmental receptors over time.

Three metals identified as toxicants by the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (Commonwealth of Australia and New Zealand Government, 2018) are present in the low carbon steel used for the suction piles – copper, chromium, and nickel. Concentrations of these metals from degradation and existing sources may exceed the GV-High concentrations provided in the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (Commonwealth of Australia and New Zealand Government, 2018) within a radius of 18.4 m from the suction piles or wellhead. Hence, toxic effects to fauna may be expected to be observed within this radius following complete degradation of the equipment. With the exception of nickel (which exceeds the DGV at all sites due to naturally high concentrations), concentrations of copper and chromium may exceed the DGV within a radius of 21.4 m from the suction piles or wellhead. The *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (Commonwealth of Australia and New Zealand Government, 2018) state there is a low risk of toxic effects occurring where toxicant concentrations are below DGVs.

The majority of the degradation products deposited in the sediments will be below the top 20-30 cm of sediments where infauna and epifauna occur. Degradation products below this depth will not credibly interact with marine fauna and will not result in biological impacts. Deposit-feeding infauna and epifauna may ingest degradation products within the upper 30 cm of the sediment, which may result in acute or chronic toxic effects to these fauna, but is reasonably assumed to be limited to within 20-30 m of the equipment (**Table 8-5**). Gillett et al. (2021) analysed long-term infauna data collected on a continental slope at sites with varying levels of disturbance in similar water depths to the Stybarrow field. Findings from this study indicated that changes in infauna assemblages in response to potential toxicants (e.g., metals and hydrocarbons in sediments) were detectable, but noted there was a high degree of stochasticity in infauna assemblage response to potential toxicants. Gillett et al. (2021) found physical factors such as water depth and sediment composition better explained observations in infauna assemblages. Gillett et al. (2021) concluded that the patterns in infauna assemblages observed in response to toxicants may be useful for community-scale condition assessments based on their results, which examined habitats and disturbances at a scale of 10s to 100s of kilometres –

much greater than the scale of potential contamination from degradation of equipment in the Stybarrow field (10s of metres around the equipment).

Given the nature and scale of the potential contaminants and the fauna that may be exposed to degradation products, impacts to benthic and infauna communities are expected to be limited to changes in community diversity and abundance within 20-30 m of degraded equipment that may not be readily distinguished from natural variation. The potentially impacted fauna is widely represented in the region and not considered to be of significant conservation value (e.g., not listed as threatened, migratory or marine under the EPBC Act). The affected deposit-feeding fauna represent a very small portion of the deposit-feeding communities with WA-32-L, with the potentially impacted area approximately 0.01% of the total area of WA-32-L.

Biomagnification occurs when substances transfer from lower to higher trophic levels, resulting in relatively high concentrations of substances in long-lived, apex predators. An extensive review by Gray (2002) found that biomagnification was less common in marine systems than terrestrial system, with m studies failing to show biomagnification (although m showed bioaccumulation – increased concentrations within an organisms during its life). Of the metals, Gray (2002) concluded that only organic mercury biomagnifies in food webs (particularly in lipids), with other metals being regulated and excreted. Mercury is not present in the equipment that will be decommissioned *in situ*. Biomagnification of mercury will not credibly occur as a result of decommissioning *in situ* of the equipment within the scope of this EP.

Some polycyclic aromatic hydrocarbons (PAHs) have been shown to biomagnify. Elevated concentrations of hydrocarbons were reported by Cardno (2019) around some Xmas trees, however low molecular weight PAHs (e.g., BTEX) were below the laboratory limits of detection. The shortest distance between of the equipment that will be decommissioned *in situ* to of the Xmas trees is approximately 2 km. None of the equipment that will be decommissioned *in situ* was exposed to production fluids and no hydrocarbons or NORM are present within the equipment. Sampling results (Cardno, 2019) at sites in close proximity to the suction piles (EH1R and H4R in **Figure 5-2**) showed no evidence of contamination in sediments, with concentrations of all metals, hydrocarbons and radioisotopes at these two sites similar to control sites six kilometres away (**Figure 5-4**, **Figure 5-6** and **Figure 5-7**). The Eskdate-1 wellhead is approximately 2 km from the nearest Stybarrow equipment. Hence cumulative impacts from degradation of equipment decommissioned *in situ* with existing contaminants is very unlikely to occur.

Potential contaminants in the carbon steel alloys from which the equipment is made have very low solubility in seawater, with ions of these metals typically forming precipitates in seawater (Angel et al., 2020). As such, impacts to water quality from equipment degradation (e.g., increased concentrations of toxicants) are not considered to be credible.

The increased concentrations of potential contaminants from degradation of the equipment decommissioned *in situ* will result in a localised change in sediment quality and benthic habitats. This may result in changes to infauna and epifauna assemblages of surface sediments within tens of metres of the equipment. Sediment quality values, infauna and epifauna that may be impacted are very widely represented in the region and not of particular conservation significance.

The EMBA overlaps the Continental Slope Demersal Fish Communities KEF. The environmental values of the Continental Slope Demersal Fish Communities comprise demersal fish assemblages. These fish assemblages will not credibly be impacted by potential contaminants in sediments as a result of degradation. Components of these fish assemblages may feed upon infauna and epifauna that have been exposed to sediments contaminated by degradation products, however this is not expected to impact upon fish assemblages due to the highly localised areas of contamination, the non-site attached nature of most fish that comprise the assemblage and the negligible biomagnification of metals in the equipment. The decommissioning *in situ* of the anchors, suction piles and wellhead is not expected to impact upon the fish assemblages of the Continental Slope Demersal Fish Communities KEF.

Impacts from degradation of equipment decommissioned *in situ* are unlikely to result in an impact greater than a localised, long-term change in sediment quality and associated fauna within the immediate vicinity of infrastructure.

8.2.3.2 Paint

The mass of paint that would be released to the environment is very small compared to the mass of steel. The relatively small amount of paint released to the environment may result in localised sediment contamination. The nature and scale of this contamination is expected to be smaller than that from rust of steel structures. The paint does not contain anti-fouling compounds and would result in negligible impacts to infauna and epifauna around the equipment.

8.2.3.3 Plastic

Small amounts (up to 3 kg) of nitrile rubber are associated with the seals and tubing within the wellhead. It is expected that as the iron around the seals and tubing corrodes, they will be exposed to seawater and may begin to degrade. Plastics are generally known to break down in seawater over long periods of time (hundreds to thousands of years) and the seal components in wellheads are selected for their resistance in high pressure, high temperature, and corrosive environments. Therefore, these components are also expected to slowly break down into various particle sizes. The seals are in the interior of the wellhead, hence degradation products from the seals are expected to fall into the wellhead or the sediments immediately surrounding the wellhead. The low rate of degradation, combined with the very small volumes of nitrile rubber remaining in situ, means the concentrations of plastics in sediments around the well are expected to be low with negligible localised impacts.

8.2.3.4 Species Recovery Plans and Threat Abatement Plans

Woodside has considered information contained in relevant recovery plans and approved conservation advice for that identify marine debris and changes in sediment quality as a threat (**Section 8.3**).

8.2.4 Demonstration of As Low As Reasonably Practicable

The ALARP process for the environmental risk is summarised in **Table 8-6**. This process was completed as outlined in **Section 7.1** and included consideration of all controls, analysis of the risk reduction proportional to the benefit gained and final acceptance or justification if the control was rejected.

Table 8-6: Equipment degradation - as low as reasonably practicable summary

Control Measure	Accept / Reject	Reason	Associated Performance Standards
Legislation, Codes and Standards			
Compliance with <i>Environmental Protection (Sea Dumping) Act 1981</i>	Accept	Control is based on a legislative requirement therefore must be adopted.	PS 1.1
Engineer			
Remove equipment	Reject	Removal of the equipment, which is buried in the seabed, would involve substantial environmental disturbance. The decommissioning alternatives environmental impact assessment (Section 3) demonstrates that decommissioning <i>in situ</i> of the anchors and suction piles results in equal or better environmental outcomes compared to removal.	-

Control Measure	Accept / Reject	Reason	Associated Performance Standards
Monitor			
As-left survey to verify mooring anchors and residual chains, suction piles and Eskdale-1 wellhead location, burial status, and condition.	Accept	As left surveys will be completed for the mooring anchors and residual chains, suction piles, and Eskdale-1 wellhead to confirm location, current condition and burial status. The as left survey activity will be conducted under the Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003).	PS 1.4
Environmental monitoring of the seabed to assess impacts to the seabed from subsea infrastructure breakdown	Reject	The degradation of equipment decommissioned <i>in situ</i> will occur over a period of hundreds to thousands of years. The rate of change in the environment will be slow and unlikely to be easily detected until substantial degradation has occurred. Given the timeframe for breakdown of materials, ongoing monitoring is impractical. Monitoring alone will not change the environmental outcome of degradation. The degradation of equipment is reliably predicted and will not result in unacceptable impacts. The cost of this control is grossly disproportionate to the environmental benefit.	-
Monitoring and/or remediation to make good damage to the seabed or subsoil and provide for conservation and protection of the natural resources in the area of the subsea infrastructure left in-situ.	Reject	Physical impacts to the seabed and subsoil from the ongoing presence of the subsea infrastructure are limited to localised scouring and accretion and habitat creation, which will have a minor impact to benthic habitats within an estimated 30 m around the suction piles and water injection manifold. Impacts to benthic habitats from previous installation and operational activities at the Stybarrow field will be assessed as part of the Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003) to address Section 270 and title relinquishment requirements. The impacts associated with ongoing physical presence of proposed subsea infrastructure do not represent an unacceptable damage to the seabed or subsoil and allow for the conservation and protection of the natural resources in the area. Therefore, there is no benefit gained from further monitoring or remediation of the seabed in the localised vicinity surrounding this infrastructure.	-

Control Measure	Accept / Reject	Reason	Associated Performance Standards
		Cost of the control is disproportionate to the benefit that may be gained from it given impacts to the seabed have been assessed as negligible.	

8.2.4.1 ALARP Summary

The risk assessment and evaluation has identified a control (**Table 8-6**) appropriate to the decision type (Decision Type A) that, when implemented, is considered to manage the impacts of the degradation of equipment decommissioned *in situ* on the marine environment to ALARP.

Woodside considers the control measure described above is appropriate to confirm the condition of the equipment at the time of decommissioning *in situ*, hence providing greater certainty to the predicted fate of the equipment decommissioned *in situ*. Additional control measures were identified in **Table 8-6** to further reduce impacts but were rejected as the associated cost or sacrifice was grossly disproportionate to the environmental benefit. The impacts of equipment degradation are therefore considered reduced to ALARP.

Furthermore, no additional controls are required to provide for the conservation and protection of natural resources around the subsea equipment proposed for decommissioning *in situ*, or to make good any damage to the seabed or subsoil, as per Section 270(3)(e) and (f) of the OPGGS Act.

8.2.5 Demonstration of Acceptability

Degradation of equipment decommissioned *in situ* will not result in potential impacts greater than a localised reduction in sediment quality. This impact is considered inherently acceptable. Further opportunities to reduce the impacts have been investigated in **Table 8-6**.

WAFIC objected to leaving equipment with epoxy paint *in situ*, such as the suction piles, during consultation. Woodside has responded to WAFIC affirming that decommissioning *in situ* yields the best environmental outcome for the suction piles (**Section 3.2.3**). Woodside has considered information contained in recovery plans and threat abatement plans (**Section 8.3**). The environmental impacts meet the Woodside environmental risk acceptability criteria (**Section 7.3**). Woodside considers the impact to be managed to an acceptable level.

The risks and impacts associated with the deposition of degradation material in the marine environment has been assessed with an acceptable level of certainty. The composition of the materials is well understood (**Table 4-3**) and how the degradation products may interact with the marine environment has been informed by evidence-based information contained in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (Commonwealth of Australia and New Zealand Government, 2018). The understanding of how the infrastructure may break down is based on a materials engineering assessment. While the timing of the degradation events is uncertain, the nature of degradation and the sequence of degradation events has been predicted with a high level of certainty. Given the localised nature and low consequence of environmental impact, low sensitivity of the receiving environment, and the relatively high degree of certainty no further controls are required to bring the impacts to an acceptable level. The following subsections provide further detail on the determination of acceptability for subsea contamination from the material breakdown.

8.2.5.1 Principles of Ecologically Sustainable Development

Demonstrations of alignment of the petroleum activity with the principles of ESD for the DTM anchors and residual chains, suction piles and Eskdale-1 wellhead are provided in **Table 3-6**, **Table 3-11** and **Table 3-16** respectively.

8.2.5.2 Monitoring to meet the Requirements of General Direction 833

Whilst ongoing monitoring has been determined not to be required based on the ALARP assessment and the acceptability of the impact from the subsea contamination, a single ROV survey will be undertaken on the subsea equipment decommissioned *in situ*. Footage will be provided to NOPSEMA to meet the requirements of NOPSEMA General Direction (832), which requires:

'Provide, to the satisfaction of NOPSEMA, for the conservation and protection of the natural resources in the title areas within 12 months after property referred to in direction 1 is removed'

and

'Make good, to the satisfaction of NOPSEMA, any damage to the seabed or subsoil in the title areas caused by any person engaged or concerned in the operations authorised by the titles within 12 months after property referred to in direction 1 is removed'

An as left survey of the infrastructure left in situ is covered under the accepted Stybarrow Decommissioning and Field Management EP ((BHPB-00SC-N000-0003)).

8.2.5.3 Annex I(2) of the 1996 London Protocol

Annex I(2) of the 1996 London Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Waste and Other Matter (update to London Convention and Protocol 1972) describes that material capable of creating floating debris or otherwise contributes to the pollution of the marine environment has to be removed.

The anchors and residual chains, suction piles and Eskdale-1 wellhead are buried or buried in the seabed and negatively buoyant. It is not credible that degradation of this equipment will create floating debris. The petroleum activity is therefore not inconsistent with Annex I(2) of the 1996 London Protocol.

8.2.5.4 Degradation Products Discharged to the Marine Environment

The *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (Commonwealth of Australia and New Zealand Government, 2018) is an evidence-based approach to managing contamination of the marine environment. As discussed in **Section 8.2.3**, long-term degradation may result in exceedances of the DGV for copper and chromium, but not GV-High, values within tens of metres of the equipment. Given most of the equipment is buried deeper than the depths credibly used by infauna, most of the degradation products will not interact with fauna. Degradation products will not result in unacceptable impacts to environmental receptors such as benthic habitats, fauna, or the Continental Slope Demersal Fish Communities KEF. The risks of bioaccumulation and biomagnification are negligible.

Concentrations of lead, barium, boron, and mercury above background levels were recorded around drilling centres, which is likely due to discharge of drilling fluids and cutting (**Section 5.3.1**). These declined rapidly with increasing distance from drill centres. There is no potential to co-contamination with the degradation products of the infrastructure proposed to be decommissioned *in situ* as the infrastructure does not contain these contaminants and (except for the Eskdale-1 wellhead) are located approximately 1,900 m from the nearest drill centre. Therefore, impacts from degradation products are acceptable.

8.2.5.5 Article 192 of the United Nations Convention on the Law of the Sea

International Maritime Organization (IMO) Resolution A.672 provides that the general requirement is removal with the objective of protecting and preserving the marine environment. Section 3 of the resolution presents standards for alternatives to removal, including:

- Equipment in < 75 m water depth and < 4,000 tonnes in air should be removed.
- Equipment abandoned *in situ* should remain on location and not move under the influence of waves, tides, currents, storms, or other foreseeable natural causes.

The equipment proposed to be decommissioned *in situ* satisfies the requirements of IMO Resolution A.672. The petroleum activity is therefore not inconsistent with IMO Resolution A.672.

8.2.6 Environmental Performance Outcome, Performance Standards and Measurement Criteria

Environmental Performance Outcome	Controls	Performance Standard	Measurement Criteria
EPO 2 Location of all equipment decommissioned <i>in situ</i> confirmed to be as described in this EP at the time of abandonment	C 1.1 Refer to Section 8.1.6	PS 1.1 Refer to Section 8.1.6	MC 1.1.1 Refer to Section 8.1.6
	C 1.4 Refer to Section 8.1.6	PS 1.4 Refer to Section 8.1.6	MC.1.4 Refer to Section 8.1.6

8.3 Physical Presence: Alteration of Seabed and Benthic Habitats

8.3.1 Summary of Risk Assessment and Evaluation

Aspect	Source of Hazard	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Physical Presence	Presence of subsea infrastructure	Scouring of the seabed around infrastructure.	10	N/A	-	Type A Low Order Impact	Tolerable
	Provision of hard substrate habitat	Provision of hard substrate habitat	10	N/A	-	Type A Low Order Impact	Tolerable

8.3.2 Source of Hazard

The infrastructure that is proposed to be left *in situ* is expected to be predominantly buried below the seabed and therefore is providing limited disturbance / physical modification impacts to the seabed (Section 4.8).

The anchors are buried within the sediment, the exposed chain will be cut at or below the mudline as close as practicable to the anchor. The suction piles for the riser holdback anchors and water injection manifold are mostly buried with a minor protrusion of equipment (approx. 0.75 - -1 m) above the seabed. The wellhead extends approximately between 2 m and 3 m above the seabed.

The infrastructure proposed for *in situ* left is primarily made of steel, with the suction piles also having an epoxy paint coating and Eskdale-1 wellhead containing up to 3 kg of nitrile rubber, as described in Table 4-3. The physical presence of the subsea infrastructure remaining *in situ* permanently has the potential to result in disturbance to the seabed and benthic habitats over the long term, over the course of hundreds to thousands of years by:

- alternating the hydrodynamic conditions around the infrastructure, potentially resulting in scouring or accretion
- introducing hard substrate resulting in the creation of a new habitat.

The equipment decommissioned *in situ* will degrade over time, eventually becoming indistinguishable from the surrounding sediments. This process will take hundreds to thousands of years.

8.3.2.1 Scouring and Accretion around the Subsea Infrastructure

The presence of the subsea infrastructure on the seafloor can interact with the surrounding hydrodynamic conditions, potentially resulting in disturbance to the seabed (scouring and accretion) which may impact on associated benthic habitats. Studies on the effects of sediment movements associated with anthropogenic structures on the seabed, such as shipwrecks and artificial reefs, indicate impacts to be limited to within 10 m of the structure (Smiley, 2006; Lewis and Pagano, 2015).

8.3.2.2 Habitat Creation

The infrastructure on the seabed and protruding into the water column provides a hard substrate that hosts benthic habitat for marine species. The decommissioning *in situ* of the mooring anchors and residual chains will provide no habitat, as this equipment will be buried within the sediment. Inspection footage of the suction piles shows they currently host relatively little marine growth (**Figure 4-6**, panel C) which is consistent with observations in similar depths in the region (McLean et al., 2018). Equipment in relatively deep water (> 800 m) hosted significantly less sessile invertebrates and associated fishes than equipment in relatively shallow water (< 200 m) (McLean et al., 2018). The Eskdale-1 wellhead extends relatively high from the seabed compared to the suction piles and may host relatively more biota as a result (McLean et al., 2018).

8.3.3 Environmental Impact Assessment

8.3.3.1 Scouring and Accretion

Observations in the Stybarrow field show no evidence of scouring during the operational phase. Depressions in the seabed from installation activities in 2005-2006 are still visible, indicating that bottom currents are not sufficient to initiate sediment transport. The water depth in the EMBA is > 800 m, which is too deep to be affected by high energy meteorological events, such as cyclones. As such, scouring around equipment decommissioned *in situ* will not credibly occur.

8.3.3.2 Habitat Creation

While the equipment in the Stybarrow field hosts less marine growth than equipment in shallow water, it is likely to host greater species diversity and abundance of epifauna in a given area than the bare sediment habitat surrounding the equipment (McLean et al., 2018). The subsea infrastructure is expected to take hundreds of years to break down (based on the degradation of steel). It is expected that until this point infrastructure will continue to provide hard substrate that hosts benthic habitat.

The EMBA overlaps the Continental Slope Demersal Fish Communities KEF. Environmental values associated with this KEF is the demersal fish community, which has a relatively high diversity and degree of endemism (Last et al., 2005). The changes in benthic habitat as a result of the presence of the equipment proposed to be decommissioned *in situ* will not be to the detriment of this environmental value, as the presence of the equipment is likely to increase the diversity and abundance of demersal fish around the equipment. This effect will be minor and localised around the equipment.

8.3.4 Demonstration of As Low As Reasonably Practicable

The ALARP process for the environmental aspect is summarised in **Table 8-7**. This process was completed as outlined in **Section 7.2** and included consideration of all controls, analysis of the risk reduction proportional to the benefit gained and final acceptance or justification if the control was rejected.

Table 8-7: Seabed Disturbance - ALARP Summary

Control Measure	Accept / Reject	Reason	Associated Performance Standards
Legislation, Codes and Standards			
Compliance with <i>Environmental Protection (Sea Dumping) Act 1981</i>	Accept	Control is based on a legislative requirement therefore must be adopted.	PS 1.1
Eliminate			
Remove equipment	Reject	The decommissioning options assessment provided in Section 3	Not applicable

Control Measure	Accept / Reject	Reason	Associated Performance Standards
		determined that leaving the subsea infrastructure <i>in situ</i> provides equal or better environmental outcomes compared to complete removal.	
Good Practice			
As-left survey to verify mooring anchors and residual chains, suction piles and Eskdale-1 wellhead location, burial status, and condition.	Accept	As left surveys will be completed for the mooring anchors and residual chains, suction piles, and Eskdale-1 wellhead to confirm location, current condition and burial status. The as left survey activity will be conducted under the accepted Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003).	PS 1.2
Monitoring and/or remediation to make good damage to the seabed or subsoil and provide for conservation and protection of the natural resources in the area of the subsea infrastructure left <i>in situ</i> .	Reject	<p>Physical impacts to the seabed and subsoil from the ongoing presence of the subsea infrastructure are limited to localised scouring and accretion and habitat creation, which will have a negligible impact to benthic habitats within an estimated 10 m around the individual infrastructure.</p> <p>Impacts to benthic habitats from previous installation and operational activities at the Stybarrow field will be assessed as part of the Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003) to address Section 270 and title relinquishment requirements.</p> <p>The impacts associated with ongoing physical presence of proposed subsea infrastructure do not represent an unacceptable damage to the seabed or subsoil and allow for the conservation and protection of the natural resources in the area. Therefore, there is no benefit gained from further monitoring or remediation of the seabed in the localised vicinity surrounding this infrastructure.</p> <p>Cost of the control is disproportionate to the benefit that may be gained from it given impacts to the seabed have been assessed as negligible.</p>	Not applicable

8.3.5 ALARP Summary

On the basis of the decommissioning options assessment outcomes (refer to **Section 3**), the environmental impact assessment outcomes and the identification of a range of controls (Table 8-5) appropriate to the decision type (Decision Type A), Woodside considers the potential impacts associated with seabed and benthic habitat alteration from the long term presence of subsea infrastructure being left *in situ* to be ALARP.

Woodside considers the control measures described above are appropriate to reduce the potential impacts to the seabed and benthic habitats during the petroleum activity. Additional reasonable control measures were identified in Table 8-7 to further reduce impacts but rejected since the associated cost and sacrifice was grossly disproportionate to any benefit. The impacts are therefore considered reduced to ALARP.

Furthermore, no additional controls are required to provide for the conservation and protection of natural resources in the area of the subsea infrastructure proposed to be left *in situ*, or to make good any damage to the seabed or subsoil, as per Section 270(3)(e) and (f) of the OPGGS Act.

8.3.6 Demonstration of Acceptability

Based on the impact assessment, given the adopted controls, the long-term physical presence of subsea infrastructure proposed to be left *in situ* will not result in potential impacts greater than a minor, localised disturbance to the seabed and benthic habitats.

Further opportunities to reduce the impacts have been investigated above. The adopted controls are considered good oil-field practice/industry best practice. The impact is consistent with the principles of ESD (as defined under the EPBC Act) (refer **Table 3-6, Table 3-11 and Table 3-16**). Woodside has considered information contained in recovery plans and threat abatement plans (**Section 9**). The environmental impacts meet the Woodside (PetDW) environmental risk acceptability criteria (**Section 7.3**). On this basis, Woodside considers the impact to be managed to an acceptable level.

8.3.7 Environmental Performance Outcome, Performance Standards and Measurement Criteria

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
EPO 3 No impacts to benthic habitats greater than a Severity Level 1 ²² from decommissioning <i>in situ</i> .	C 1.1 Refer to Section 8.1.6	PS 1.1 Refer to Section 8.1.6	MC 1.1.1 Refer to Section 8.1.6
	C 1.2 Refer to Section 8.1.6	PS 1.2 Refer to Section 8.1.6	MC 1.2.1 Refer to Section 8.1.6

²² Defined as minor temporary impact to the environment, where the ecosystem function recovers with little intervention (**Section 7**)

8.4 First Nations Cultural Features and Heritage Values

As described in Section 5.6.1, the identification of cultural features and heritage values of the environment as well as the social, economic and cultural features important to First Nations people is integral to understanding the environment and potential impacts and risks to the environment.

In line with Woodside’s First Nations Communities Policy (Woodside 2023), Woodside seeks to avoid damage or disturbance to cultural heritage (including intangible heritage) and, if avoidance is not possible, minimise and mitigate the impacts, in consultation with First Nation communities and Traditional Custodians. Mitigation can include measures or controls aimed at ensuring the viability of the intangible cultural heritage and its intergenerational transmission. This can include reducing impacts and risks to environmental features that are associated with intangible cultural heritage (UNESCO 2003; ICOMOS 2013).

It is important to note that not all topics raised by First Nations groups / individuals through consultation are considered values for the purpose of the cultural features and heritage values impact assessment below. A number of topics were raised in the context of a general interest in environmental management and ecosystem health (i.e., natural environment interest), where the group/individual was seeking further information about potential impacts and risks from the Stybarrow Decommissioning activity on a receptor. As these interests relate to the maintenance of the natural environment, these are adequately addressed through impact and risk assessments described in Sections 8.1 8.2 and 8.3 respectively and not further assessed below.

Aspect	Cultural Features and Heritage Values								
Description of source impact/ risk (key aspects)	Physical presence – Interaction with other Marine Users (Planned and Unplanned) Presence of equipment decommissioned <i>in situ</i> may result in interaction with other marine users. As described in Section 8.1, there is the potential for impacts due to interaction or displacement of marine users.								
	Physical Presence – Equipment Degradation Corrosion and breakdown of equipment decommissioned <i>in situ</i> over time will release materials to the marine environment. impacts from degradation of equipment decommissioned <i>in situ</i> are unlikely to result in an impact greater than a localised, long term and minor change in sediment quality within the EMBA. Degradation of paint is assessed to result in negligible impacts to infauna and epifauna around the equipment. The concentrations of plastics in sediments around the well are expected to be low with negligible localised impacts.								
	Physical Presence – Alteration of the Seabed and Benthic Habitats As described in Section 8.1, there is the potential for impacts due to provision of hard substrate habitat and scouring of the seabed around equipment.								
Planned Activity Aspect	<i>The potential environmental impacts from the activity to species that have a cultural feature or heritage value have been summarised below to provide the context related cumulative impact on the cultural feature or heritage value.</i>								
Impact Significance Level									
Environmental impact assessment to marine species	Marine mammals	Marine reptiles	Fish	Seabirds	Coral	Benthic Habitats e.g., seagrass	Shoreline habitats e.g., Mangroves		
8.1 Physical Presence – Interaction with Other Marine Users (Planned and Unplanned)	N/A	N/A	Negligible (F)	N/A	N/A	Negligible (F)	N/A		
8.2 Physical Presence – Equipment Degradation	N/A	N/A	Negligible (F)	N/A	N/A	Negligible (F)	N/A		
8.3 Physical Presence – Alteration of the Seabed and Benthic Habitats	N/A	N/A	Negligible (F)	N/A	N/A	Negligible (F)	N/A		
Impact and Risk Assessment	The activity has the potential to impact cultural features and heritage values in the following ways: Archaeological heritage: <ul style="list-style-type: none"> Places that are identified in the literature for their value as archaeological sites can be assumed to be impacted where there is an impact to the archaeological or scientific values of its tangible 								

elements. This could include damage or disturbance of archaeological material or to the archaeological context.

Intangible cultural heritage:

- 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 impacts to surviving songlines these would be significantly more likely to be described as qualitative (i.e., “weaken” a songline) rather than binary or absolute (i.e., destroy a songline).
- Creation/dreaming sites; sacred sites; ancestral beings: Activities that physically alter landscape features may be assumed to potentially impact values of creation/dreaming sites, sacred sites or ancestral beings.
- Ceremonial sites: Activities that prevent the performance of ceremony at these sites will directly impact its values.
- Cultural obligations to care for Country: Environmental impacts may be assumed to impact rights and obligations to care for Sea Country. Exclusion of Traditional Custodians from Sea Country (e.g., by restricting access) or decision-making processes (e.g., by not conducting ongoing consultation) are other potential sources of impact.
- Knowledge of Country/customary law and transfer of knowledge: Direct impact to communities practicing these skills will inherently occur when relevant aspects of the environment disappear, are displaced or suffer a reduction in population. Therefore, the transmission of these skills is expected to be impacted where there are impacts at the species/population level. Limitations on access to sites or disruption/relocation of First Nations communities may have implications for the preservation of First Nations knowledge.
- Cultural Safety refers to respecting local Lore and culturally significant areas to protect individuals from cultural harm. There are many cultural implications for those (Aboriginal and non-Aboriginal) who do not follow cultural advice or access Country in culturally inappropriate ways.
- Connection to Country: Where people are displaced or disrupted (e.g., during colonisation) or where there is a loss of technical skills or environmental knowledge this may damage connection to Country (McDonald and Phillips, 2021).
- Access to Country: Impacts to access to Country may be classified as temporary (e.g., where exclusion zones exist around activities for safety reasons) or permanent (e.g., where infrastructure obstructs access or navigation). Impacts to access to Country can only occur in areas that were traditionally accessed by Traditional Custodians. As described in Section 5.6.1 this is anticipated to be focussed on areas adjacent to the coast.
- Kinship systems and totemic species: It is assumed that marine species may have kinship/totemic relationships to Traditional Custodians, but it is understood that these relationships do not prohibit people outside of that “skin group” from hunting or eating that same species (Juluwarlu 2004). It is therefore inferred that the management of totemic or kinship species applies at the species/population level and not to individual plants and animals.
- Resource collection: Direct impact to communities using these resources will inherently occur when the resource disappears, is displaced or suffers a reduction in population. Therefore, marine species (as resources) will be impacted where there is an impact at the species/population level.

Marine ecosystems and species:

- Marine ecosystems may hold both cultural and environmental value (see Section 5.6.1), with cultural and environmental values intrinsically linked (DCCEEW 2023, MAC 2021 as cited in Woodside 2023a). It necessarily follows that an impact to marine ecosystems has the potential to impact cultural features where the impact is detectable within sea country — the seascape which Traditional Custodians view, interact with or hold knowledge of.

Archaeological Heritage

Onshore / intertidal archaeological sites

No coastal areas or islands exist within the EMBA. A review of the of DPLH’s Aboriginal Heritage Inquiry System identified no Registered Aboriginal Sites or Other Heritage Places in the EMBA.

Submerged archaeological sites

The EMBA is beyond the depth of the ancient coastline therefore the potential for submerged First Nations archaeological sites is assessed as negligible.

General Intangible values

Songlines

Management of intangible cultural heritage can include reducing impacts and risks to environmental features that are associated with intangible cultural heritage (UNESCO 2003; ICOMOS 2013). Impacts to marine plants, animals and other cultural features associated with songlines might impact the intergenerational transmission of knowledge of songlines when individuals can no longer witness or interact with the cultural features tied to songlines on Country. Therefore, managing songlines may require environmental controls protecting species at a population level, including migratory routes. Refer to species specific assessment below for further information.

Physical features comprising a component of a songline are important to protect to prevent the fragmenting or breaking apart of songlines and loss of sacred cultural knowledge. Songlines can become lost, fragmented, or broken when there is a loss of Country or impact to culturally important physical features (Neale and Kelly 2020:30). No specific details of songlines within the EMBA have been provided by relevant persons during consultation for this Activity, and no landforms typical of songlines (e.g., mountains, rivers, caves and hills (Higgins 2021)) are anticipated to be impacted by the Activity.

While the presence of songlines is generally raised in the literature across several relevant communities, no specific details have been identified. The literature review has also identified culturally important features, which are known to be commonly associated with songlines (e.g. marine species and landforms; Section 5.6.1.6), and these have been separately assessed. No feedback regarding songlines was received during consultation (Section 5.6.1.8). Further assessment of intangible values and marine species are provided below.

Creation/dreaming sites; sacred sites; ancestral beings.

Woodside has undertaken all reasonable steps to identify creation and dreaming sites, and places associated with ancestral beings within the EMBA. No such sites have been identified. A review of relevant literature has been undertaken which has identified creation, dreaming and ancestral narratives related to the sea more broadly without confirming where (if anywhere) these overlap the EMBA (see Section 5.6.1.6). These references are of a general nature, and do not identify features or values requiring specific protection or management from the proposed activities.

Sea serpents or water serpents are common in Aboriginal creation narratives, and several references were identified in the reviewed literature. The majority of these refer to serpents residing within inland rivers or pools outside of the EMBA (Barber and Jackson 2011; Dury v Western Australia [2018] FCA 1849; Hayes v Western Australia [2008] FCA 1487; Juluwarlu 2004; Kalbarri Visitor Centre, 2023; Water Corporation 2019; Zaunmayr 2016; DBCA 2020). In some versions, the serpent originates from the sea or coast and creates the rivers as it heads inland. Barber and Jackson (2011) also recount a story where a freshwater serpent pushes a sea serpent back into the ocean where it presumably continues to reside. This does not provide the specificity required to determine the location of sea serpents within the sea, and it is possible that the ocean as a whole (out to and beyond other continents) should be viewed generally as housing the sea serpent(s). Consultation with Traditional Custodians have not identified activities in this EP as having an impact on sea serpents (refer to Section 5.6.1.8). However, by analogy to other water serpent narratives across Australia, possible impact pathways may include interruption of its path by blocking or reducing flows of water, damaging sacred sites such as thalu or rock art sites or depleting water sources. No impacts to water flows (either tidal movement or ocean currents) or depletion of water sources are anticipated from the activities in this EP. No impacts to thalu or rock art sites are anticipated from the activities in this EP.

Ceremonial sites

No direct impacts to onshore ceremonial sites are anticipated from the activity in this EP. No feedback was received regarding ceremonial sites (Section 5.6.1.8). However, indirect impacts may occur where ceremonies cannot be performed due to limitations on access, loss of knowledge or impacts to the environment, which are further described below.

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. Lack of access to coastally located cultural sites that carry songlines or remain ceremonially important can impact First Nations people's livelihoods and impact their ability to carry out cultural obligations on Country. No impacts of this nature are considered to arise from the activity in this EP.

Knowledge of Country / customary law and transfer of knowledge

Cultural knowledge about Sea Country/customary law and the intergenerational transmission of knowledge are important values identified through consultation, assessments and the literature review.

Transfer of knowledge includes continuing traditional practices to pass on practical skills. Direct impact to communities practicing these skills will inherently occur when relevant aspects of the environment disappear, are displaced or suffer a reduction in population—for example traditional

fishing methods require the survival of traditional fish resources. Therefore, ensuring the transmission of cultural knowledge may require environmental controls protecting species and migratory pathways at a population level. Refer to species specific assessment below for further information.

Connection to Country

Connection to Country describes the multi-faceted relationship between First Nations people and the landscape, which is envisioned as having personhood and spirit. Connection to Country may be damaged where people are displaced or disrupted (e.g., during colonisation) or where there is a loss of technical skills or environmental knowledge (McDonald and Phillips, 2021). No impacts of this nature are considered to arise from the activity in this EP. Access to Country is discussed below.

Access to Country

Access to Country, including Sea Country, is necessary for the continuation of other values including caring for Country and the transfer of traditional knowledge. Access is also a value in its own right, as a continuation of traditional Sea Country access and use. Due to the location offshore, this activity is not expected to impact on Access to Country.

Cultural Safety

Cultural Safety refers to respecting local Lore and culturally significant areas to protect individuals from cultural harm. There are many cultural implications for those (Aboriginal and non-Aboriginal) who do not follow cultural advice or access Country in culturally inappropriate ways. Cultural safety may include observing gender restricted areas, respecting significant places and restricted areas as well as following the advice from those with cultural authority. No impacts of this nature are considered to arise from the activity in this EP.

Kinship systems and totemic species

Individuals may have kinship to specific species (Smyth 2008, Juluwarlu 2004) and/or a responsibility to care for species (Muller 2008). These relationships are understood to impose obligations on Traditional Custodians. It is understood that these obligations do not impose restrictions on other people generally, but it is considered that impacts to species at a population level may inhibit Traditional Custodians with kinship relationships' ability to perform their obligations where this results in reduced or displaced populations. It is therefore considered that the management of totemic or kinship species applies at the species/population level and not to individual plants and animals. As such, impacts to individual marine fauna is not expected to impact on the totemic or kinship cultural connection.

Totemic species identified during consultation on other Environment Plans include whales, fish, stingrays and octopuses. Refer to species specific assessment below for further information.

Resource collection

A suite of marine species has been identified through consultation on other Environment Plans and literature as important resources, particularly as food sources. For example, Sea Country resources of noted relevance to Thalanyji people which may be present in the vicinity of the Montebello Islands include dugongs, majun (marine turtles), turtle eggs, fish and shellfish. Other resource species include marine mammals, fish, molluscs including bivalves, gastropods and cephalopods and seabirds, sea urchins and mangrove seeds.

In addition to their immediate value as sustenance, the gathering and preparation of these resources are informed by cultural knowledge, and an inability to use these resources may result in a loss of ability to transfer that knowledge to future generations. Direct impact to communities using these resources will inherently occur when the resource disappears, is displaced or suffers a reduction in population. Therefore, these communities may be impacted where there is an impact at the species/population level.

Impacts from planned activities on the marine environment, including resources important to First Nations people, is expected to be limited to negligible and therefore impacts that result in population effects (e.g., population decline, changes in migration routes, etc.) are not expected.

Marine Ecosystems and Species

Marine mammals (whale, dolphins, dugongs)

There are increase ceremonies / rituals for species of animals and plants important to First Nations, to enhance or maintain populations. Thalu are places where these increase ceremonies are performed. All mentions of active ceremonial sites in the reviewed literature were confined to onshore locations, though the values may extend offshore where, for example, the thalu relates to marine species populations. As thalu ceremonies are performed to maintain and increase populations of marine species, it is inferred that management applies at the species/population level and not to individuals. Reviewed literature (DBCA 2020) also includes information that is marked as information that cannot be copied, reproduced or used without consent. There are no credible impacts to marine mammals from the petroleum activity.

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 First Nation people and their surrounding environment. Beyond mythology and symbolism, whales can be connected with various economic and social functions associated with everyday life. Cultural knowledge of whales, whale migration, behaviour and the related marine environment may all be important in ensuring the continuation of these socio-economic functions and other related activities that remain valuable to First Nations people (Fijn 2021). No impacts to communities' ability to perform or transmit stories, music or dance are anticipated from the activities in this EP. 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.

During consultation, First Nations groups have expressed interest in whales, whale migratory routes and the potential for collisions with whales. Inter-generational transmission of cultural knowledge (including songlines) relating to marine mammals may be impacted where changes to population or behaviour at a population level results in reduced sightings (e.g., through population decline, changes to migration routes or changes to migration seasonality). This transfer of knowledge may be integral to managing a group's intangible cultural heritage (UNESCO 2003).

As described in the relevant environmental impact and risk assessments in Sections 8.1, 8.2 and 8.3 respectively, no permanent impacts preventing cetaceans from entering or occupying the areas have been identified. These impacts and risks are not considered to be ecologically significant at a population level, and hence are not expected to impact the value of marine mammals, including the transmission of cultural knowledge. As such, cultural values and intangible cultural heritage associated with these species are expected to be maintained.

Marine reptiles (turtles, sea snakes, crocodiles)

Turtles and crocodiles have been identified through consultation on other Environment Plans and existing literature as an important resource, particularly as food sources. Direct impact to communities using these resources will inherently occur when the resource disappears, is displaced or suffers a reduction in population. Therefore, these species (as resources) will be impacted where there is an impact at the species/population level.

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 because 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). Activities that impact turtle / crocodile 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).

As identified in Table 5-3, no threats to marine reptiles arising from the petroleum activity were identified.

As such, cultural values and intangible cultural heritage associated with these species are expected to be maintained.

Fish and Cephalopods

Fish 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) will be impacted where there is an impact at the species/population level.

During consultation, First Nations groups expressed an interest in whale sharks. Through consultation on other Environment Plans, fish were identified as important agents in the management of the broader ecosystem. 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 and whale sharks, 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.

Thalu are places where 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 where, for example, the thalu relates to marine species populations. As thalu ceremonies are performed to maintain and increase populations of marine species, it is inferred that management applies at the species/population level and not to individuals.

As described in the relevant environmental impact and risk assessments in Sections 8.1, 8.2 and 8.3 respectively, the potential impacts from planned activities on fish²³ are considered to be localised impact potential on species, but not affecting ecosystem function, physical or biological attributes. Impact potential is not considered to be ecologically significant at a population level. As such, cultural values and intangible cultural heritage associated with these species are expected to be maintained.

Seabirds

Seabirds have been identified through literature 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) will be impacted where there is an impact at the species/population level. Intangible cultural heritage may also include the transmission of cultural knowledge about 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).

As identified in Table 5-3, no threats to seabirds arising from the petroleum activity were identified.

As such, cultural values and intangible cultural heritage associated with these species are expected to be maintained.

Benthic habitats (coral, seagrass)

Through consultation on other Environment Plans, First Nations groups identified benthic habitats as valuable for their ecological values, including corals attracting fish and seagrass providing shelters for fauna, as well as an important habitat for dugongs.

Risk to benthic habitats is assessed in Sections 8.1, 8.2, and 8.3 Impacts to benthic and infauna communities are expected to be minor and localised around the equipment remaining *in situ*. As such, cultural values and intangible cultural heritage associated with benthic habitats are expected to be maintained.

Shoreline Habitats (mangroves / salt marshes)

Through consultation on other Environment Plans, First Nations groups identified shoreline habitats as valuable for their ecological values, including mangroves for providing shelter to marine invertebrates, which are identified resources, and potential nursery for turtles. Literature also notes that mangroves are also valued for the flora and fauna they are associated with and support (Commonwealth of Australia 2002) and Smyth (2007) reports that mangrove seeds are used as a resource by Ngarda-Ngarli.

There is no overlap between the EMBA and shoreline habitats.

As such, cultural values and intangible cultural heritage associated with shoreline habitats are expected to be maintained.

Marine Park / coastal reserves

Woodside considers the management plans of marine parks that overlap the EMBA to determine whether cultural features and heritage values have been identified or whether there are specified Traditional Custodians or representative bodies referenced to contact regarding potential cultural features and heritage values. The EMBA does not overlap Commonwealth Marine Parks or State Marine Parks. As such, cultural values and intangible cultural heritage associated with marine parks are expected to be maintained.

Conclusion

The impact and risk assessment for cultural features and heritage values has determined that the activities are unlikely to result in an impact greater than negligible (F).

ALARP Demonstration

As marine ecosystems may hold both cultural and environmental value (see Section 5.6.1), with cultural and environmental values intrinsically linked, in addition to the specific controls for cultural features and heritage values, the controls and performance standards in section 8.1, 8.2 and 8.3 will reduce impacts to cultural features and heritage values, including marine species and habitats.

²³ Squid and octopus are considered to be impacted through similar impact pathways as fish, and hence the conclusion represented here are considered appropriate for cephalopods.

	Control considered	Feasibility (F) & Cost/ Sacrifice (Cs)	Benefit in Impact/Risk Reduction	Proportionality	Adopted
	Apply a 'living heritage' ²⁴ management approach. Woodside seeks advice and incorporates Traditional Custodian cultural knowledges across our activities. Cultural safety considerations are factored for our workforce and the Traditional Custodian community.	F: Yes CS: Minimal	Implementation of the 'living heritage' approach pays acknowledgement and respect to Traditional Custodian communities. It supports the transfer of cultural knowledges and is an effective strategy to manage intangible cultural values.	Benefits outweigh cost/ sacrifice.	Yes C 3.1
	Engage a qualified maritime archaeologist to review available data and provide an independent report on the potential for credible impacts to underwater cultural heritage.	F: Yes CS: Minimal	May enable identification of prospective underwater cultural heritage features on the seabed and evaluation of further mitigative controls.	Benefits do not outweigh cost/ sacrifice. Per Section 8.2, impacts from equipment degradation are expected to be highly localised. Given the water depth (~825 m) and location outside of the ancient coastline it is highly unlikely First Nations cultural heritage would be identified.	No
ALARP Statement	On the basis of the impact and risk assessment outcomes and use of the relevant tools appropriate to the decision type (i.e. Decision Type A, Section 7.1.1), Woodside considers the adopted controls appropriate to manage the potential impacts and risks to cultural features and heritage values. As no reasonable additional/alternative controls were identified that would further reduce the impacts without grossly disproportionate sacrifice, the impacts are considered ALARP.				
Acceptability Statement	<p>The impact and risk assessment has determined that, given the adopted controls, planned activities are unlikely to result in an impact greater than negligible.</p> <p>The petroleum activity and the EMBA are not expected to have an impact (e.g., changes in population levels) on MNES including marine fauna with a First Nations connection with, or traditional use in nearshore areas as defined in Section 5.1.2.</p> <p>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. In the event of an unplanned loss of hydrocarbons Woodside has committed to engaging with relevant cultural authorities that may be affected (Appendix E).</p>				

²⁴ 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 influences, including oral traditions, art, social practices, rituals and ceremonies, cultural knowledge and practices. It is transmitted from generation to generation and evolves in response to the environment. Woodside applies a 'living heritage' approach to its cultural heritage management. This includes ensuring that Traditional Custodians are given voice to identify interests, transmit information and express concerns. Woodside works with Traditional Custodians to support and follow appropriate cultural protocols, including calling to Country, conducting smoking ceremonies (in areas where this custom is appropriate) and undertaking cultural awareness. Woodside will collaborate and provide relevant information it holds to groups such as Heritage Management Committees where they are established.

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.

Key Environmental Performance Outcomes, Standards and Measurement Criteria related to Cultural Features and Heritage Values²⁵			
EPO	Adopted Control(s)	EPS	MC
EPO 4 No adverse impact to cultural features and heritage values, greater than a consequence level of F from the activity	C 4.1 Apply a 'living heritage management approach. Woodside seeks advice and incorporates Traditional Custodian cultural knowledge across our activities. Cultural safety considerations are factored for our workforce and the Traditional Custodian community.	PS 4.1.1 Woodside will continue to give voice to Traditional Custodians to identify interests, transmit information and express concern.	MC 4.1.1 Records demonstrate Change Management and Management of Knowledge processes have been followed where new controls or management measures identified
		PS 4.1.2 Woodside will assess and where deemed practicable will implement appropriate cultural protocols where requested by Traditional Custodians	MC 4.1.2 Records demonstrate Woodside implemented cultural protocols as requested

²⁵ As marine ecosystems may hold both cultural and environmental value (see Section 5.6.1), with cultural and environmental values intrinsically linked, in addition to the specific controls for cultural features and heritage values, the controls and performance standards in section 8.1, 8.2 and 8.3 will reduce impacts to cultural features and heritage values including marine species and habitats.

9 Recovery Plan and Threat Abatement Plan Assessment

Woodside has reviewed the recovery and threat abatement plans and conservation advice for threatened fauna that may occur within the EMBA. Relevant threat abatement and recovery plans and conservation advice, along with an assessment of the petroleum activity against their objectives and actions, are provided in **Table 9-1**.

Table 9-1: Assessment of the petroleum activity' consistency with objectives and actions in relevant recovery plans and threat abatement plans

Recovery Plan / Conservation Advice / Management Plan	Relevant Threats, Action Areas or Objectives	Assessment of Consistency
Threat Abatement Plan for the Impacts of Marine Debris on the Vertebrate Wildlife of Australia's Coasts and Oceans (Commonwealth of Australia, 2018)	Objectives: <ul style="list-style-type: none"> Contribute to long-term prevention of marine debris 	Not inconsistent Section 8.2 considers the impacts of the degradation of the subsea infrastructure. Debris from the degradation of the equipment will not credibly impact upon vertebrate species. Fishes are the only vertebrate group that may credibly interact with the equipment (and associated degradation products).
Recovery Plan for the White Shark (<i>Carcharodon carcharias</i>) (Department of Sustainability, Environment, Water, Population and Communities, 2013)	No identified threats arising from petroleum activity	Not applicable
Conservation Management Plan for the Blue Whale: A Recovery Plan under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> 2015-2025 (Commonwealth of Australia, 2015)	Threats: <ul style="list-style-type: none"> Habitat modification (including marine debris) 	Not inconsistent Section 8.2 considers the impacts of the degradation of the subsea infrastructure. Debris from the degradation of the equipment will not credibly interact with blue or pygmy blue whales as the degradation products are negatively buoyant and the EMBA is deeper than recorded diving depths of these species.
Conservation Management Plan for the Southern Right Whale: A Recovery Plan under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> 2011-2021 (Department of Sustainability, Environment, Water, Population and Communities, 2012)	No identified threats arising from petroleum activity	Not applicable
Recovery Plan for Marine Turtles in Australia 2017-2027 (Commonwealth of Australia, 2017)	Action Areas: A3: Reduce the impacts from marine debris	Not inconsistent Section 8.2 considers the impacts of the degradation of the subsea infrastructure. Debris from the degradation of the equipment will not credibly interact with turtles as the degradation products are negatively buoyant and the EMBA is substantially deeper than turtles can dive.

Recovery Plan / Conservation Advice / Management Plan	Relevant Threats, Action Areas or Objectives	Assessment of Consistency
<p>National Recovery Plan for Threatened Albatrosses and Giant Petrels 2011-2016 (Department of Sustainability, Environment, Water, Population and Communities, 2011)</p>	<p>Threats:</p> <ul style="list-style-type: none"> • Marine pollution (including debris) 	<p>Not inconsistent</p> <p>Section 8.2 considers the impacts of the degradation of the subsea infrastructure. Debris from the degradation of the equipment will not credibly interact with albatrosses and petrels (or their prey) as the degradation products are negatively buoyant.</p>

10 Implementation Strategy

In accordance with Regulation 22 of the Environment Regulations, the EP must contain an implementation strategy for the petroleum activity and monitoring, recording and reporting arrangements. The implementation strategy presented in this section provides specific practices and procedures to ensure:

- all the environmental impacts and risks of the petroleum activity will be continually identified and reduced to a level that is ALARP.
- control measures identified in the EP are effective in reducing the environmental impacts and risks of the activity to ALARP and acceptable levels.
- environmental performance outcomes and environmental performance standards are met.
- arrangements are in place to respond to and monitor impacts of oil pollution emergencies.
- arrangements for ongoing consultation with relevant authorities, persons and organisations are in place and maintained through the activities.

10.1 Systems, Practices and Procedures

10.1.1 Woodside PetDW Health, Safety and Environment Management Systems

The HSE Management System defines the boundaries within which all activities are conducted. It provides a structured framework to set common requirements, boundaries, expectations, governance and assurance for all activities. It also supports accountabilities and responsibilities as defined in the organisational structure. The overarching objective of the HSE Management System is to aspire to zero harm to people, communities and the environment, and achieve leading industry practice. The structure of the HSE Management System is hierarchical (**Figure 10-1**).

The documents in **Figure 10-1** address specific areas (for example, corporate performance reporting, risk management, incident investigation) where it is important activities are conducted consistently across the organisation.

The top level of the triangle shown in **Figure 10-1** is the Our Values; a copy of Our Values is provided in **Appendix A**. Our Values details Woodside's values and directs the approach to all activities in Woodside. It includes value statements on each of sustainability, integrity, respect, performance, simplicity, and accountability. It also provides a means of aligning Woodside's values with strategic direction and measures of success.

The Woodside Our Requirements detail and define business planning, risk management, and assurance expectations of key process areas. They also serve as audit protocol against which all groups in Woodside are assessed. Categories of Our Requirements include (for example) HSE, Human Resources, Legal, Corporate Affairs, Supply, and Information Management.

Direction for environmental performance in Woodside is established by the Environment and Climate Change – Our Requirements. The petroleum activities described in this EP will be undertaken in accordance with the objectives of Our Values, which includes compliance or exceedance with regulatory requirements, setting of objectives and targets and continual improvement.

This EP meets the environmental aspects of the PetDW HSE Management System framework and establishes the foundation for continual improvement through the application, monitoring and auditing of consistent requirements across all aspects of the Petroleum Activity, including:

- identification of statutory obligations and commitments to ensure maintenance of license to operate.
- implementation of petroleum risk management processes, including this EP

- scheduled monitoring and auditing of control implementation
- completion of reviews, and reporting outcomes of these reviews.

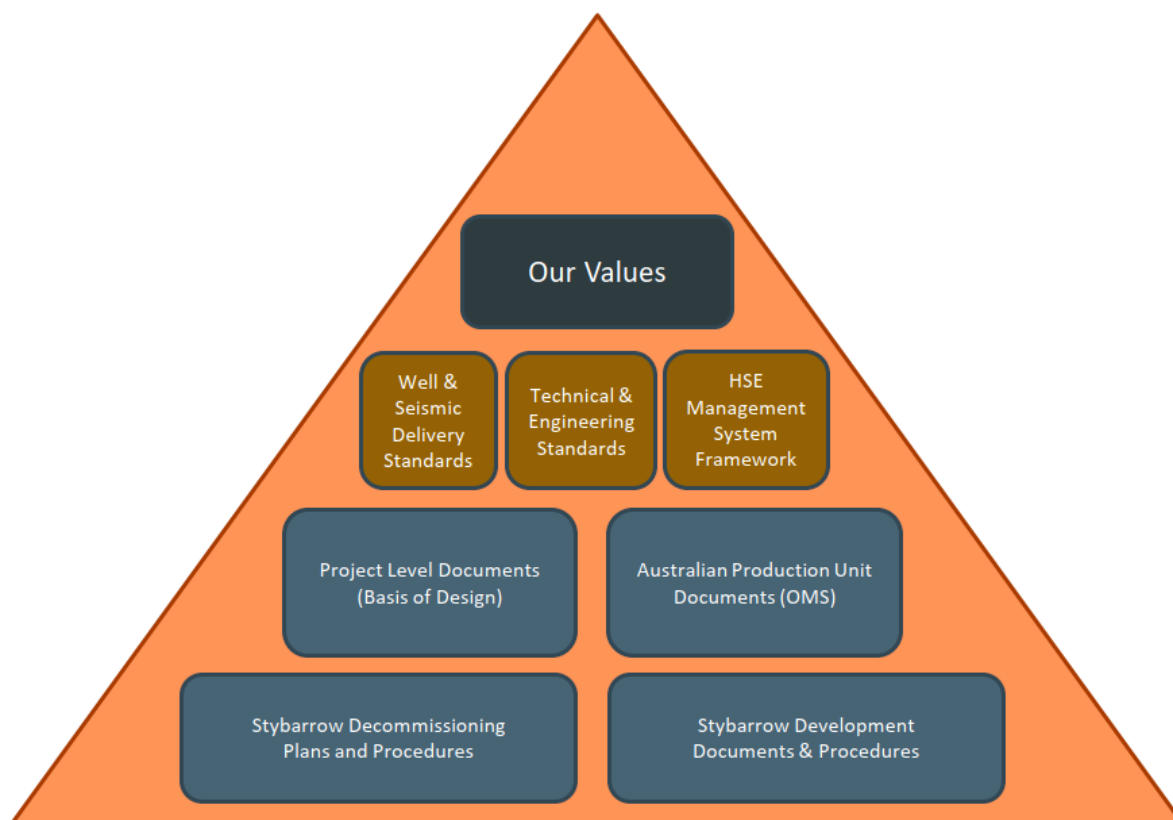


Figure 10-1: PetDW HSE Management System

10.1.2 Environment Plan Organisation, Roles and Responsibilities

A defined chain of command with the roles and responsibilities for key Woodside and contractor personnel in relation to EP implementation, management and review are described in **Table 10-1**. It is the responsibility of all Woodside employees and contractors to ensure the HSE-related Our Requirements and the Woodside’s “Our Values” (**Appendix A**) are applied in their areas of responsibility.

Table 10-1: Key personnel and environmental responsibilities

Title	Environmental Responsibilities
Office-based Roles	
Woodside Asset Manager	<ul style="list-style-type: none"> • Have Technical Authority and manage team of projects and decommissioning professionals. • Ensure sufficient resources are provided to implement the commitments made in this EP
Woodside Decommissioning Delivery Manager (or equivalent)	<ul style="list-style-type: none"> • Ensures activity undertaken as per this EP. • Provides sufficient resources to implement the management measures (i.e., controls, EPOs, EPSs and MC) in this EP.
Woodside Environment Advisor	<ul style="list-style-type: none"> • Track compliance with performance outcomes and performance standards as per the requirements of this EP

Title	Environmental Responsibilities
	<ul style="list-style-type: none"> • Assist with the review, investigation and reporting of environmental incidents. • Liaise with relevant regulatory authorities as required. • Assist in preparation of external regulatory reports required, in line with environmental approval requirements and Woodside incident reporting procedures.
Woodside Corporate Affairs Adviser	<ul style="list-style-type: none"> • Prepare and implement the Relevant Persons Consultation Plan. • Report on consultation with relevant persons • Perform notifications as required for this EP

10.2 Training and Competency

Training is not relevant to this EP on the basis that there will be no field activities, vessel-based activities or contractor engagement required to implement the EP.

10.3 Monitoring, Auditing and Management of Non-conformance and Review

10.3.1 Monitoring Environmental Performance

There are no field activities proposed within this EP. Once the EP has been accepted, Woodside will undertake post acceptance activities which includes collecting the relevant data, as outlined in the EPOs, EPSs and MCs in this EP. The collection of this data (against the MCs) will form part of the permanent record of compliance maintained by Woodside and will form the basis for demonstrating the EPOs and EPSs are met, which will be summarised in the Environmental Performance Report (**Section 10.4**) and be used to support the End of Environment Plan notification (**Section 10.4**).

10.3.2 Auditing

Environmental performance auditing will be conducted to confirm compliance with the Performance Outcomes, Controls and Standards detailed in this EP. Non-conformances identified will be reported and/ or tracked in accordance with **Section 10.3.1**.

10.3.3 Management of Non-Conformance

Woodside classifies non-conformances with EPOs and standards in this EP as environmental incidents. Woodside employees and contractors are required to report all environmental incidents, and these are managed as per Woodside's internal event recording, investigation and 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 reoccurrence are all recorded. Corrective actions are monitored using First Priority and closed out in a timely manner.

Woodside uses a severity rating for classification of environmental incidents, with the significant categories having a severity level (consequence) of 3, 4 or 5 (as detailed in **Section 7**). Detailed investigations are completed for all incidents classified as a 3, 4 or 5 severity (consequence) level and high potential environmental incidents.

10.3.4 Record Keeping

Record keeping will be in accordance with Regulation 22(6) of the Environment Regulations. The collection of compliance records (against the MC) will form part of the permanent record of compliance maintained by

Woodside and will form the basis for demonstrating that the EPOs and standards are met, which will be summarised in a series of routine reporting documents.

10.3.5 EP Management of Change and Revision

Changes are managed in accordance with Woodside's Environmental Approval Requirements Australia Commonwealth Guideline. There are no field activities proposed within this EP. The activity will end upon completion of all post acceptance requirements described in **Section 8** of this EP. Given there are no field activities, management of change may relate to potential new advice from relevant persons (**Section 6**).

The provisions set out in Regulation 39 of the Regulations will be followed for revision of this Environment Plan.

10.4 Reporting

10.4.1 Routine Reporting (External)

Although no field activities are planned under this EP, environmental outcomes are linked to activities that will be conducted under the Stybarrow Decommissioning and Field Management EP. Given this, an environmental performance report required by Regulations 22(7) and 51 of the Environment Regulations will be submitted at least every year while the EP is in force, detailing that the environmental performance standards in the EP have been met (**Section 4.5**). The final environmental performance report will be submitted within four months of the completion of equipment removal activities covered under the Stybarrow Decommissioning and Field Management EP (**Table 4-2**). This will permit sufficient time for the collation of relevant information (e.g., as-left surveys required by PS 1.3 in **Section 8.1.6**).

Whilst ongoing monitoring has been determined not to be required based on the ALARP assessment and the acceptability of the impacts described in this EP, an as-left ROV survey will be undertaken of the equipment decommissioned *in situ* will be completed as part of equipment removal activities detailed in the Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003). Images or footage will be provided to NOPSEMA under that EP to meet the requirements of NOPSEMA General Direction (833) as part of the environmental performance report for the accepted Stybarrow Decommissioning and Field Management EP, which requires:

'Provide, to the satisfaction of NOPSEMA, for the conservation and protection of the natural resources in the title areas within 12 months after property referred to in direction 1 is removed'

and

'Make good, to the satisfaction of NOPSEMA, any damage to the seabed or subsoil in the title areas caused by any person engaged or concerned in the operations authorised by the titles within 12 months after property referred to in direction 1 is removed'.

Routine reporting requirements are summarised in **Table 10-2**.

Table 10-2: Routine external reporting requirements

Report / Notification	Recipient	Frequency	Content
Environmental Performance Report (as per the requirements of Regulations 22(7))	NOPSEMA	<ul style="list-style-type: none"> The report will be submitted annually. The final environmental performance report will be submitted within four months of the completion of equipment removal activities covered under the Stybarrow Decommissioning and Field Management EP (Table 4-2), as per the requirements of Regulation 22(7). 	In accordance with the Environment Regulations the report will address compliance with EPOs, EPSs and controls outlined in this EP.

Report / Notification	Recipient	Frequency	Content
End of Environment Plan Notification	NOPSEMA	The End of Environment Plan Notification will be submitted following submission of the final Environmental Performance Report (as per requirements of Regulation 46).	In accordance with the Environment Regulations the notification will confirm the end of the Environment Plan.
Ongoing Consultation (Section 10.5)			
Program of Ongoing Engagement with Traditional Custodians (Appendix E)	Relevant cultural authorities	Ongoing until the end of the EP. Note the Program of Ongoing Engagement with Traditional Custodians may continue in relation to other EPs after the end of this EP. Responses to any feedback received by Traditional Custodian groups will be provided by Woodside within four weeks of receipt. Progress on the Program will be reported in line with annual sustainability reporting via the Woodside website.	Dependent on feedback received

10.4.2 Incident Reporting (External)

10.4.2.1 Reportable Incidents

A reportable environmental incident is defined in Regulation 5 of the Environment Regulations as:

“...reportable incident, for an activity, means an incident relating to the activity that has caused, or has the potential to cause, moderate to significant environmental damage”.

Reportable incidents for the petroleum activity include those that have been identified through the risk assessment process as having a severity (consequence) level of ≥ 3 (refer to **Table 7-3**). None of the environmental impacts and risks credibly arising from the petroleum activities in this EP can result in a severity (consequence) level of ≥ 3 .

In accordance with Regulations 47, 48 and 49, Woodside will report all reportable incidents orally to NOPSEMA, as soon as practicable, and in any case not later than two hours after the first occurrence of the reportable incident; or if the reportable incident was not detected at the time of the first occurrence, the time of becoming aware of the reportable incident.

Oral notifications of a reportable incident to NOPSEMA will be via telephone: 1300 674 472.

The oral notification must contain:

- all material facts and circumstances concerning the reportable incident known or could be obtained by reasonable search or enquiry.
- any action taken to avoid or mitigate any adverse environment impacts of the reportable incident.
- the corrective action that has been taken, or is proposed to be taken, to stop, control or remedy the reportable incident.

A written record of the reportable incident will be provided to NOPSEMA, as soon as practicable after making the oral notification, but within three days after the first occurrence of the reportable incident unless NOPSEMA specifies otherwise. The written report should use a format consistent with NOPSEMA’s Report of an Accident, Dangerous Occurrence or Environmental Incident (Form FM0929).

Within seven days of giving a written report of a reportable incident to NOPSEMA, a copy of the same written report must be provided to the National Petroleum Titles Administrator (NOPTA), and Department of Energy, Mines, Industry Regulation and Safety (DEMIRS).

Written notification must be provided of any environmental incident that could potentially impact on any land or water in State jurisdiction via: petroleum.environment@dmirs.wa.gov.au.

10.4.2.2 Recordable Incident

In terms of the activities within the scope of this EP, a recordable incident is a breach of the environmental performance outcome or environmental performance standards listed in this EP.

In the event of a recordable in recordable incident, Woodside will report the occurrence to NOPSEMA as soon as is practicable after the end of the calendar month in which it occurs; and in any case, not later than 15 days after the end of the calendar month. If no recordable incidents have occurred, a 'nil incident' report will be submitted to NOPSEMA. Written reporting to NOPSEMA of recordable incidents and 'nil incidents' can be via completion of NOPSEMA's Form FM0928– Recordable Environmental Incident Monthly Report. The report will contain:

- a record of all the recordable incidents that occurred during the calendar month.
- all material facts and circumstances concerning the recordable incidents that are known or can, by reasonable search or enquiry, be found out.
- any action taken to avoid or mitigate any adverse environmental 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.

10.5 Ongoing Consultation

Although consultation for the purpose of Regulation 25 is complete, in accordance with Regulation 22(15) of the Environment Regulations, the implementation strategy must provide for appropriate consultation with relevant authorities of the Commonwealth, a State or Territory and other relevant interested persons or organisations.

Woodside proposes to undertake the engagements with relevant interested persons throughout the life of the EP. Relevant new information identified during ongoing consultation will be assessed, as appropriate using the EP Management of Change Process (refer to **Section 10.3.5**).

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 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 (see **Section 6**), Woodside will apply its EP Management of Change process (refer to **Section 10.3.5**), as appropriate.

Woodside has developed a Program of Ongoing Engagement with Traditional Custodians (**Appendix E**), which is compliant with Corporate Woodside policies, strategies, and procedures, and directly informed by feedback from Traditional Custodians. It provides a mechanism for ongoing dialogue so that Traditional Custodians can, on an ongoing basis, provide Woodside with feedback relating to the activity and in relation

to caring for and managing country, including Sea Country. The Program will be tailored to each Traditional Custodian group and may include, as agreed with relevant Traditional Custodians:

- social investment to support Indigenous ranger programs.
- support for Indigenous oil spill response capabilities
- support for recording Sea Country values
- support to Traditional Custodian groups to build capabilities and capacity with respect to ability to engage with Woodside and the broader O&G industry on activities.
- development of ongoing relationships with Traditional Custodian groups
- any other initiatives proposed for the purpose of protecting Country including cultural values.

At the time of EP submission, a number of specific activities as part of ongoing consultation regarding the activity are planned with Traditional Custodian Relevant Persons. These are described in **Appendix E**.

10.6 Oil Pollution Emergency Plan

There are no credible scenarios that may arise from the petroleum activities that would result in the release of hydrocarbons. Hence, there is no requirement for an oil pollution emergency plan for this EP.

11 References

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Appendix A Woodside “Our Values”

OUR VALUES

One team

We are inspired by our common purpose.

We challenge, respect, and back each other.

We are inclusive, value diversity, and can be ourselves.

We care

We keep each other safe.

We listen and respond with humility.

We respect the environment, operate responsibly, and care for communities.

We adapt to the world's expectations of us.

Innovate every day

We explore ideas, find creative solutions, and try new ways of doing things to provide the energy the world needs today and low-cost, lower-carbon energy for tomorrow.

Results matter

We go after opportunities and show courage by taking the right risks and learning from our mistakes.

We spend and invest as if it's our money.

We are proud of our achievements.

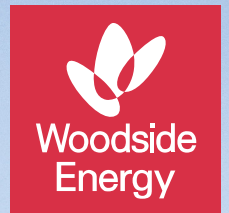
Build and maintain trust

Trust takes time and effort and will not be taken for granted.

We nurture relationships and act with integrity – doing what we say and doing it well.



PART OF
A BETTER
FUTURE



Appendix B Environment and Biodiversity Policy

OBJECTIVE

Woodside recognises the intrinsic value of nature and the importance of conserving biodiversity and ecosystem services to support the sustainable development of our society. We are committed to doing our part. We understand and embrace our responsibility to undertake activities in an environmentally sustainable way.

PRINCIPLES

Woodside commits to:

- Implementing a systematic approach to the management of the impacts and risks of our operating activities on an ongoing basis, including emissions and air quality, discharge and waste management, water management, biodiversity and protected areas.
- Applying the mitigation hierarchy principle (avoid, minimise, restore) and a continuous improvement approach to ensure we maintain compliance, improve resource use efficiency and reduce our environmental impacts.
- Embedding environmental and biodiversity management, and opportunities, in our business planning and decision making processes.
- Complying with relevant laws and regulations and applying responsible standards where laws do not exist.
- Not undertaking new exploration or development of hydrocarbons within the boundaries of natural sites on the UNESCO World Heritage List (as specified at 1 December 2022). Existing activity may continue if compatible with maintenance of the listed outstanding universal values.
- Not undertaking new exploration or development of hydrocarbons within IUCN Protected Areas (as specified at 1 December 2022) unless compatible with management plans in place for the area. Existing activity may continue if compatible with management plans in place for the area.
- Achieving net zero deforestation¹ associated with new projects that take a Final Investment Decision (FID) after 1 December 2022.
- Developing Biodiversity Action Plans for all new major projects (CAPEX >USD\$2 billion) that take a FID after 1 December 2022.
- Supporting positive biodiversity outcomes in regions and areas in which we operate.
- Setting targets and publicly reporting on our environmental and biodiversity performance.

APPLICABILITY

Responsibility for the application of this Policy rests with all Woodside employees, contractors and joint venturers engaged in activities under Woodside operational control. Woodside managers are also responsible for promotion of this Policy in non-operated joint ventures.

This Policy will be reviewed regularly and updated as required.

Reviewed by the Woodside Energy Group Ltd Board in December 2023.

¹ Definition of Forest: 'trees higher than 5 metres and a canopy cover of more than 10 percent on the land to be cleared'.

Appendix C Relevant Legislation, Regulations and Other Requirements

Commonwealth Legislation

Legislation or Regulation	Description	Relevance	EP Section
<i>Corporations Act 2001</i>	This Act is the principal legislation regulating matters of Australian companies, such as the formation and operation of companies, duties of officers, takeovers and fundraising.	The titleholder has provided ACN details within the meaning of the Act.	Woodside's ACN is provided in Table 1-3 Section.1.8
<i>Environment Protection (Sea Dumping) Act 1981</i> Environment Protection (Sea Dumping) Regulations 1983	The Act regulates the dumping at sea of controlled material (including certain wastes and other matter), the incineration at sea of controlled material, loading for the purpose of dumping or incineration, export for the purpose of dumping or incineration, and the placement of artificial reefs. Permits are required for sea dumping activities. Operational discharges from vessels are not defined as 'dumping' under the 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 and therefore not regulated under the Act.	The decommissioning <i>in situ</i> of the equipment within the scope of this EP will be the subject of a future application for a sea dumping permit.	Description of the Activity (Section 4)
<i>Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)</i> Environment Protection and Biodiversity Conservation Regulations 2000	Commonwealth Department of Sustainability, Environment, Water, Population & Communities administers Act that provides legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places—defined in the EPBC Act as matters of national environmental significance (NES). These include nationally threatened species and ecological communities, migratory species and Commonwealth marine areas. The Act regulates assessment and approval of proposed actions likely to have a significant impact on a matter of NES. The approval decision is made by a delegate of the Australian Government Environment Minister. Regulations provide for a wide range of detail essential for the operation of the Act, including regulations relating to management of Commonwealth reserves, information requirements for assessment processes, enforcement,	This Act applies to all aspects of the activity that have the potential to impact MNES. NOPSEMA manages compliance with the relevant regulations and plans under the Act for this EP. Where activities have existing approvals under the Act, these will continue to apply.	Matters protected under the EPBC Act within the EMBA are considered in the Description of the Environment (Section 5). Documents made under the EPBC Act are considered when determining the acceptability of environmental impacts and risks (Sections 6.1 and 8).

Legislation or Regulation	Description	Relevance	EP Section
	granting of various permits, publication requirements and criteria that need to be met in relation to a wide variety of decision-making processes provided for under the Act.		
Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023	<p>Regulations administered by NOPSEMA to ensure offshore petroleum activity is carried out in a manner consistent with the principles of ecologically sustainable development and in accordance with an accepted environment plan, in particular:</p> <ul style="list-style-type: none"> • assessment of EPs • investigation of accidents, occurrences and circumstances with regard to deficiencies in environmental management. 	Applies to environmental management of petroleum activities.	All sections of the EP. Refer to Table 1-2 for how the EP addresses EP content requirements.
Offshore Petroleum and Greenhouse Gas Storage (Regulatory Levies) Act 2003	Act to impose levies relating to the regulation of offshore petroleum activities, including well levies and environment plan levy.	A levy will be applied to the petroleum activities under this EP based on the levy categories. The description and duration of the activities determines the levies that apply to the EP.	Description of the Activity (Section 4)
<i>Offshore Petroleum and Greenhouse Gas Storage Act 2006</i>	<p>Legislation concerning Australian offshore petroleum exploration and production in Commonwealth waters. National Offshore Petroleum Safety and Environmental Management Authority regulates matters with powers conferred directly from OPGGS Act and subsidiary regulations concerned with:</p> <ul style="list-style-type: none"> • occupational health and safety law at facilities and offshore operations • environmental management • structural integrity of wells 	Applies to all aspects of petroleum activities.	Refer to Table 2-1 for details on General Direction 833.

Legislation or Regulation	Description	Relevance	EP Section
	NOPSEMA issued General Direction 833 under the OPGGS Act		
<i>Underwater Cultural Heritage Act 2018</i>	The Act replaces the <i>Historic Shipwrecks Act 1976</i> with a modernised framework for protecting and managing Australia underwater culture heritage. The Act protects shipwrecks, sunken aircraft that are at least 75 years old, whether their location is known or unknown, and associated relics. It also enables the Minister to protect shipwrecks that have been sunk for less than 75 years if they are of historic significance, such as ships wrecked during World War II. All relics associated with historic shipwrecks are protected both while associated with the shipwreck and after their removal, provided that they went down with the ship. The Act also enables the Minister to declare protected zones around underwater cultural heritage values. A permit is required to carry out prescribed activities, such as trawling, diving or mooring or using ships in a protected zone. The Act prohibits conduct that may interfere with protected shipwrecks and their associated relics.	There are no known underwater cultural heritage features within the EMBA. Woodside will manage underwater cultural heritage values within the EMBA identified during the petroleum activity in accordance with the Act.	Not applicable

International Conventions and Agreements

Convention or Agreement or Regulation	Description	Relevance	EP Section
Agreement between the Government of Australia and the Government of Japan for the Protection of Migratory Birds in Danger of Extinction and their Environment, 1974 (commonly referred to as JAMBA)	JAMBA provides for cooperation between Japan and Australia to minimise harm to major areas used by birds that migrate between the two countries.	The EPBC Act gives effect to JAMBA by listing migratory birds recognised by the agreement as migratory under the EPBC Act. Migratory species are MNES.	Migratory species are considered in the description of the environment (Section 5)
Agreement between the Government of Australia and the Government of the People’s Republic of China for the Protection of Migratory Birds and their Environment, 1986 (commonly referred to as CAMBA)	CAMBA provides for cooperation between China and Australia to minimise harm to major areas used by birds that migrate between the two countries.	The EPBC Act gives effect to CAMBA by listing migratory birds recognised by the agreement as migratory under the EPBC Act. Migratory species are MNES.	Migratory species are considered in the description of the environment (Section 5)
Agreement between the Government of Australia and the Government of the Republic of Korea for the Protection of Migratory Birds and their Environment, 2002 (commonly referred to as ROKAMBA)	ROKAMBA provides for cooperation between the Republic of Korea and Australia to minimise harm to major areas used by birds that migrate between the two countries.	The EPBC Act gives effect to ROKAMBA by listing migratory birds recognised by the agreement as migratory under the EPBC Act. Migratory species are MNES.	Migratory species are considered in the description of the environment (Section 5)
Convention on the Conservation of Migratory Species of Wild Animals, 1979 (Bonn Convention)	The Bonn Convention aims to conserve migratory species within their migratory ranges. The Bonn Convention provides specific protection for migratory species threatened with extinction or requiring international cooperation to conserve effectively.	The EPBC Act gives effect to the Bonn Convention through listing species as migratory under Part 3 of	Migratory species are considered in the description of the environment (Section 5)

Convention or Agreement or Regulation	Description	Relevance	EP Section
		the Act. Migratory species are MNES.	
<p>Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (London Convention)</p> <p>1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (London Protocol)</p>	<p>The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972, referred to as the London Convention, is an international agreement to control pollution of the sea by dumping. It was updated by the 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972, referred to as the London Protocol. Australia is a signatory to the London Convention and the London Protocol. The <i>Environment Protection (Sea Dumping) Act 1981</i> gives effect to the London convention and London Protocol in Australian offshore waters.</p>	<p>The decommissioning in <i>situ</i> of the equipment within the scope of this EP is subject to the London Convention and the London Protocol.</p>	<p>Section 2.1 describes the relevance of the London Convention and London Protocol to the petroleum activities within the scope of this EP.</p>
<p>Minamata Convention on Mercury (Minamata Convention)</p>	<p>The Minamata Convention on Mercury requires parties to address adverse effects of mercury to protect human health and the environment. Australia is a signatory to, and has ratified, the Convention. No specific federal legislation has been introduced to give effect to the Minamata Convention, with effect given by existing Commonwealth, state and territory legislation.</p>	<p>Mercury may be produced from oil and gas reservoirs and become deposited within equipment exposed to produced fluids, such as Xmas trees, flowlines and risers. None of the equipment within the scope of this EP was exposed to produced fluids, nor contains mercury. Hence, the Minamata Convention is not relevant to the petroleum activities within the scope of this EP.</p>	<p>Not applicable</p>

Convention or Agreement or Regulation	Description	Relevance	EP Section
<p>United Nations Convention on the Law of the Sea (UNCLOS)</p>	<p>Article 60 of the 1982 United Nations Convention on the Law of the Sea (UNCLOS), to which Australia is a party, states:</p> <p><i>“ installations or structures which are abandoned or disused shall be removed to ensure safety of navigation, taking into account generally accepted international standards established in this regard by the competent international organization. Such removal shall also have due regard to fishing, the protection of the marine environment and the rights and duties of other States.”</i></p> <p>Following UNCLOS, the IMO published Resolution A.672(16) Guidelines and Standards for the Removal of Offshore Installations and Structures on the Continental Shelf and in the Exclusive Economic Zone (IMO 1989). This resolution recognises that structures on the continental shelf should be removed, but coastal states (such as Australia) may make decisions to leave structures partially or completely in the sea.</p>	<p>The decommissioning in <i>situ</i> of the equipment within the scope of this EP is subject to Article 60 of UNCLOS.</p>	<p>Section 2.1 describes the relevance of UNCOLS to the petroleum activities within the scope of this EP.</p>

Appendix D Existing Environment and Protected Matters Search Tool Reports



Description of the Existing Environment

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1. INTRODUCTION

1.1 Purpose

This document applies, where indicated in the relevant Environment Plan, to Woodside Energy Ltd. (Woodside) activities and operations.

1.2 Scope

This document describes the existing environment within the Woodside areas of activity located in Commonwealth waters off north-western Western Australia (WA), with a focus on the North-west Marine Region (NWMR) (**Figure 1-1**). This document includes details of the particular and relevant values and sensitivities of the environment as required by the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 in order to inform the impact and risk evaluation of Woodside's activities within the NWMR. Furthermore, the key values of the South-west Marine Region (SWMR) and the North Marine Region (NMR) are summarised to encompass areas outside the NWMR. This is with reference to the environment that may be affected (EMBA), as defined and described in individual EPs, for unplanned hydrocarbon spill risks. Additional information appropriate to the nature and scale of the impacts and risks of activities that may interact with the environment will be used to further inform impact and risk assessments and included in the Description of the Existing Environment of individual EPs.

This document is informed by a variety of resources that includes: a search of the Department of Agriculture, Water and the Environment (DAWE) Protected Matters Search Tool (PMST) for the marine bioregions (NWMR, SWMR and NMR) and the three PMST reports provided in **Appendix A**; State (WA)/Commonwealth Marine Park Management Plans, the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Species Profile and Threats Database (SPRAT), Part 13 statutory instruments (recovery plans, conservation advices and wildlife conservation plans for listed threatened and migratory species); and peer reviewed scientific publications, as well as Woodside and Joint Venture (JV) funded studies and other titleholder funded study findings available in the public domain.

1.3 Review and Revision

The information presented in this document is reviewed and updated, where relevant, on at least an annual basis to address any relevant changes, which includes but is not limited to the status of EPBC Act listed species, Part 13 Instruments, policies and guidelines and recently published scientific literature.

1.4 Regional Context

Where relevant, the physical, biological and social environments within the areas of interest are discussed with reference to the three marine bioregions of Australia—NWMR, SWMR and NMR (**Table 1-1**). The NWMR is the focal marine bioregion for the Description of the Existing Environment as this is currently the location of most of Woodside's activities.

Table 1-1. Description of the Marine Bioregions

Marine Bioregion	Description
North-west	The NWMR includes all Commonwealth waters (from 3 nautical mile [nm] from the Territorial Sea Baseline [TSB] to the 200 nm Exclusive Economic Zone [EEZ] boundary) extending from the WA/Northern Territory (NT) border to Kalbarri, south of Shark Bay in WA, covering an area of approximately 1.07 million square kilometres and includes extensive areas of shallower waters on the continental shelf, as well as deep areas of abyssal plain where water depths are 5000 m or greater.
South-west	The SWMR comprises Commonwealth waters from the eastern end of Kangaroo Island in SA to Shark Bay in WA. The region spans approximately 1.3 million square kilometres of temperate and subtropical waters and abuts the coastal waters of SA and WA.
North	The NMR comprises Commonwealth waters from west Cape York Peninsula to the NT/WA border). The region covers approximately 625,689 square kilometres of tropical waters in the Gulf of Carpentaria and Arafura and Timor seas, and abuts the coastal waters of Queensland and the NT.

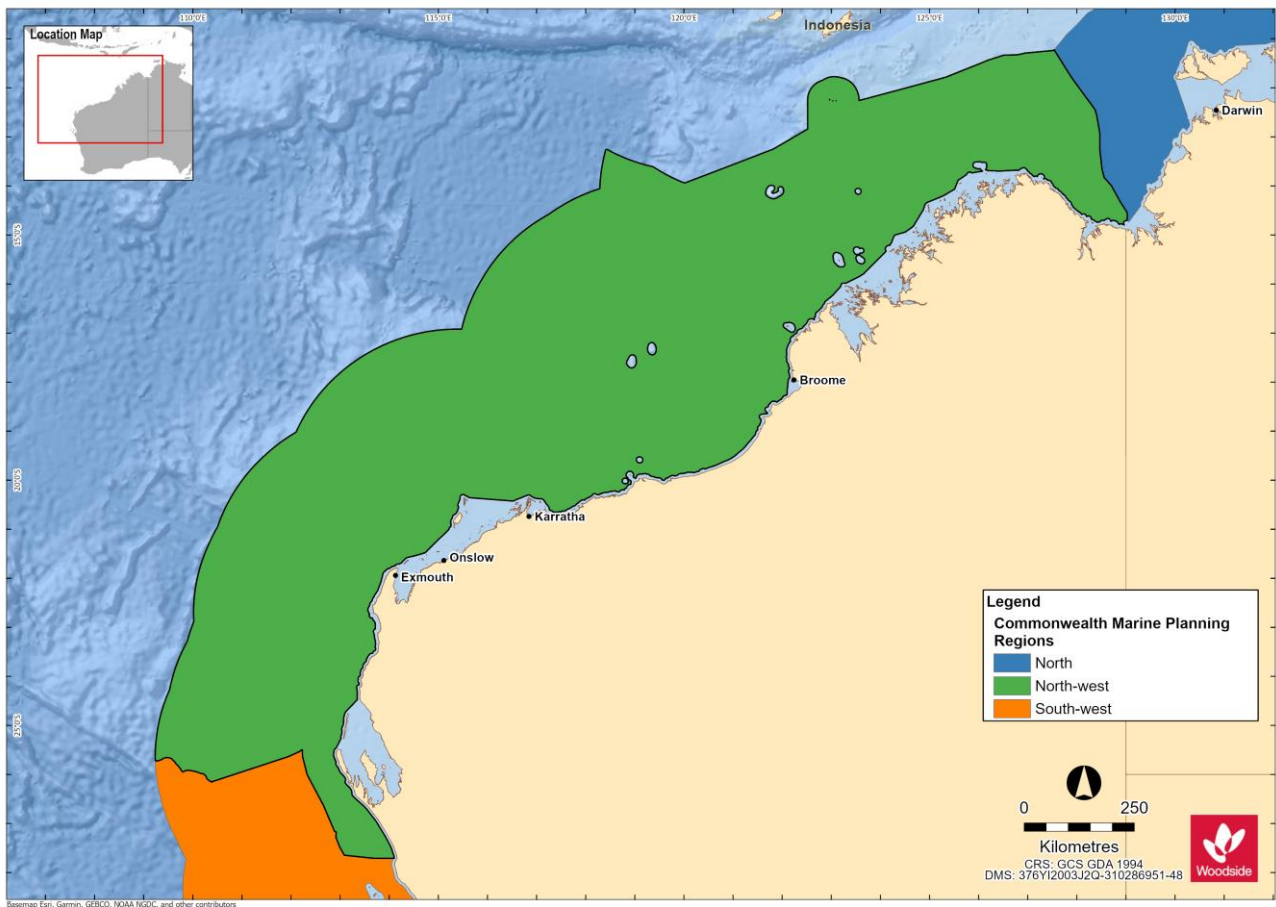


Figure 1-1. Marine Bioregions: North-west (NWMR), South-west (SWMR) and North (NMR)

2. PHYSICAL ENVIRONMENT

2.1 Regional Context

The key physical characteristics of the NWMR, SWMR and NMR are presented in **Table 2-1**.

Table 2-1 Key physical characteristics of the NWMR, SWMR and NMR

Bioregion	Key Characteristics
North-west Marine Region	The NWMR experiences a tropical monsoonal climate towards the northern extent of the region, transitioning to tropical arid and subtropical arid within the central and southern areas of the region (DSEWPAC, 2012a).
	The NWMR is part of the Indo-Australian Basin, the ocean region between the north-west coast of Australia and the Indonesian islands of Java and Sumatra. Dominant currents in the Region include: the South Equatorial Current, the Indonesian Throughflow; the Eastern Gyral Current, and the Leeuwin Current (DEWHA, 2007a).
	The seafloor of the NWMR consists of four general feature types: continental shelf; continental slope; continental rise; and abyssal plain and is distinguished by a range of topographic features including canyons, plateaus, terraces, ridges, reefs, and banks and shoals.
South-west Marine Region	The SWMR contains both subtropical and temperate climates, with overall light climatic cycles.
	The SWMR experiences complex and unusual oceanographic patterns, driven largely by the Leeuwin Current and its associated currents that have a significant influence on biodiversity distribution and abundance.
	The major seafloor features of the SWMR include a narrow continental shelf on the west coast to the waters off south-west WA, and a wide continental shelf dominated by sandy carbonate sediments of marine origin in the Great Australian Bight, the region also contains a steep, muddy continental slope, many canyons and large tracts of abyssal plains (DSEWPAC, 2012b).
North Marine Region	The NMR experiences a tropical monsoonal climate with complex weather cycles, including high temperatures and heavy seasonal yet variable rainfall and cyclones, which can be both destructive (loss of seagrass and mangroves) and constructive (mobilisation of sediment into coastal habitats).
	The NMR comprises Commonwealth waters from west Cape York Peninsula to the NT-WA border, covering tropical waters in the Gulf of Carpentaria and Arafura and Timor seas. Currents in the NMR are driven largely by strong winds and tides, with only minor influences from oceanographic currents such as the Indonesian Throughflow and the South Equatorial Current (DSEWPAC, 2012c).
	The seafloor of the NMR consists mainly of a wide continental shelf, as well as other geomorphological features such as shoals, banks, terraces, valleys, shallow canyons and limestone pinnacles.

2.2 Marine Systems of the North-west Marine Region.

The NWMR can be divided into three large scale ecological marine systems on the basis of the influence of major ocean currents, seafloor features and eco-physical processes (e.g. climate, tides, freshwater inflow) upon the Region (DSEWPAC, 2012a). The three large scale marine systems approximate the Woodside activity areas within the NWMR (**Figure 2-1**). The key characteristics of each marine system are outlined below in **Table 2-2**.

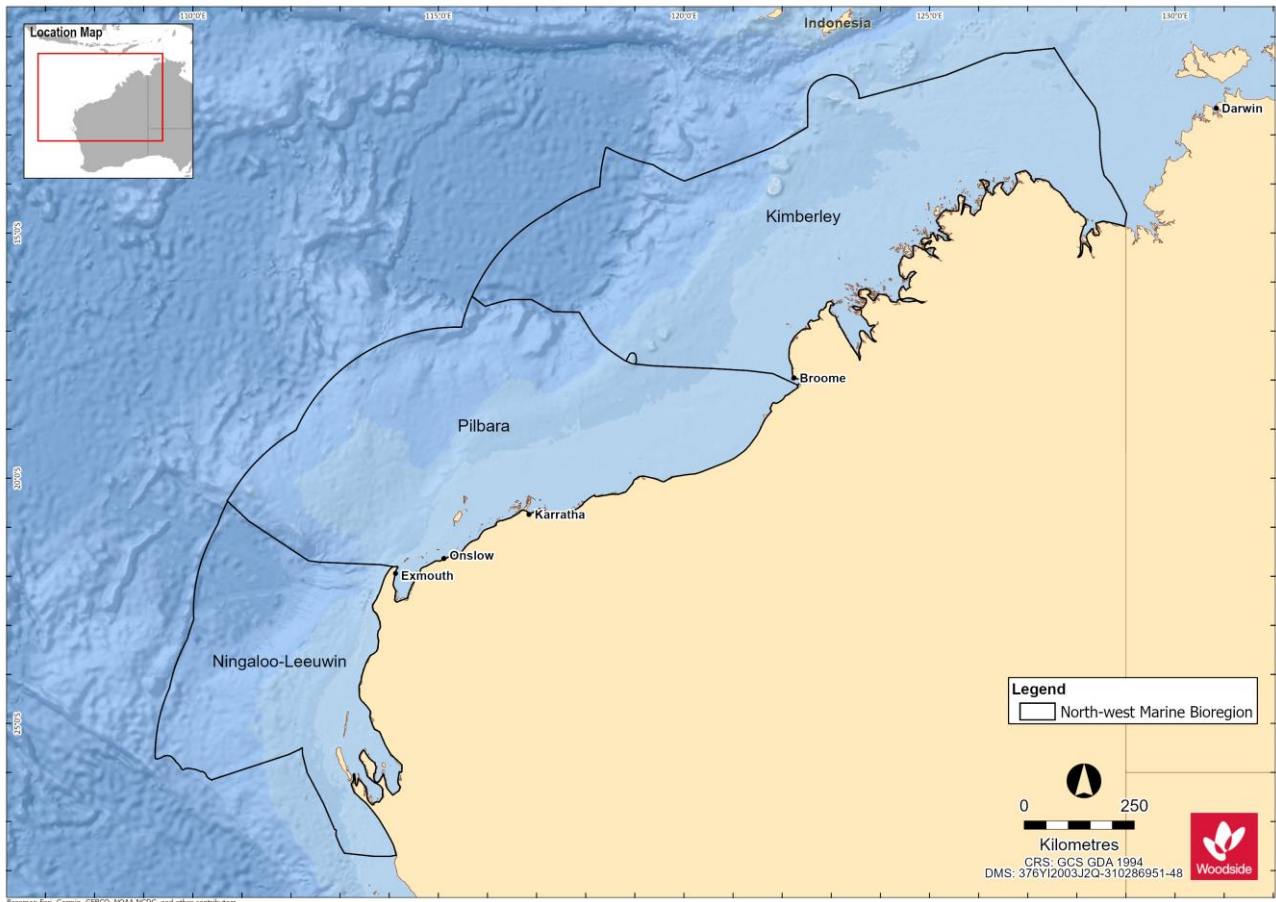


Figure 2-1. The marine systems of the North-west Marine Region (NWMR)

Table 2-2. Key characteristics of the Marine Systems of the NWMR

Note: Woodside areas align with the marine systems as described in DEWHA (2007a)

Marine System	Woodside Activity Area	Key Characteristics
Kimberley	Browse	Tropical monsoonal climate Strong influence from Indonesian Throughflow Predominantly tropical Indo-Pacific species Subject to episodic offshore cyclonic activity, rarely crossing the coast Large tidal regimes Freshwater input from terrestrial monsoonal run-off Turbid coastal waters (i.e. light limited systems) Dominated by shelf environments Predominantly hard substrates in inner to mid-shelf environments Includes a number of shelf-edge atolls (i.e. Scott Reef, Rowley Shoals)
Pilbara	North-west Shelf (NWS) / Scarborough	Tropical arid climate Transition between Indonesian Throughflow and Leeuwin Current dominated areas Predominantly tropical species High cyclone activity with frequent crossing of the coast Transitional tidal zone Internal tide activity Large areas of shelf and slope Dry coast with ephemeral freshwater inputs
Ningaloo-Leeuwin	North-west Cape	Subtropical arid climate Leeuwin Current consolidates Transitional tropical/temperate faunal area Higher water clarity in near-shore and offshore environments Narrow shelf and slope Marginal tidal range Seasonal wind forcing more dominant influence on marine environment

2.3 Meteorology and Oceanography

This section describes the general meteorological conditions and oceanography for the NWMR and provides further detail for the three Woodside activity areas. The NWMR is influenced by a complex system of ocean currents that change between seasons and between years, which generally result in its surface waters being warm and nutrient-poor, and of low salinity (DEWHA, 2007a). The mix of bathymetric features, complex topography and oceanography across the whole north-west marine environment has created and supports a globally important marine biodiversity hotspot (Wilson, 2013).

Table 2-3 NWMR climate and oceanography summary

Receptor	Description
Meteorology	
Seasonal patterns	The NWMR associated land mass of the Australian continent is characterised as a hot and humid summer climate zone. The broader NWMR experiences variations of a tropical or monsoon climate. In the far north-west (Kimberley), there is a hot summer season from December to March and a milder winter season between April and November. The Pilbara area is described as having a tropical arid climate with high cyclone activity (DEWHA, 2007a). The Pilbara and North-west Cape has a hot summer season from October to April and a milder winter season between May and September with transition periods between the summer and winter regimes.
Air temperature and rainfall	In summer (between September and March), maximum daily temperatures range from 31°C to 33°C. During winter (May to July), mean daily temperatures range from 18°C to 31°C (BOM ¹), refer to Figure 2-2a and b . Rainfall in the region typically occurs during the summer, with highest falls observed late in the season. This is often associated with the passage of tropical low-pressure systems and cyclones.
Wind	Wind patterns in north-west WA are dictated by the seasonal movement of atmospheric pressure systems. During summer, high-pressure cells produce prevailing winds from the north-west and south-west, which vary between 10 and 13 ms ⁻¹ . During winter, high-pressure cells over central Australia produce north-easterly to south-easterly winds with average speeds of between 6 and 8 ms ⁻¹ . Refer to Figure 2-3a and b .
Tropical cyclones	The NWS and Pilbara coast (within the NWMR) experiences more cyclonic activity than any other region of the Australian mainland coast (BOM, 2021a). Tropical cyclone activity typically occurs between November and April and is most frequent in the region during December to March (i.e. considered the peak period), with an average of about one cyclone per month (BOM, 2021a). Refer to Figure 2-4 .
Oceanography	
Ocean temperature	Waters in NWMR are tropical year-round, with sea surface temperature in open shelf waters reaching ~26°C in summer and dropping to ~22°C in winter. Nearshore temperatures (as recorded for the NWS area) fluctuate more widely on an annual basis from ~17°C in winter to ~31°C in summer (Chevron Australia, 2010). Refer to Figure 2-5a and b .
Currents	The major surface currents influencing north-west WA flow towards the poles and include the Indonesian Throughflow, the Leeuwin Current, the South Equatorial Current, and the Eastern Gyral Current. The Ningaloo Current, the Holloway Current, the Shark Bay Outflow, and the Capes Current are seasonal surface currents in the region. Below these surface currents are several subsurface currents, the most important of which are the Leeuwin Undercurrent and the West Australian Current. These subsurface currents flow towards the equator in the opposite direction to surface currents (DEWHA, 2007a). Refer to Figure 2-6 . The offshore waters of the NWMR are characterised by surface and subsurface boundary currents that flow along the continental shelf/slope and are enhanced through inflows from the ocean basins and are an important conduit for the poleward heat and mass transport along the west coast (Wijeratne <i>et al.</i> , 2018). Local physical oceanography is strongly influenced by the large-scale water movements of the Indonesian Throughflow (Liu <i>et al.</i> 2015; Sutton <i>et al.</i> 2019). Typically, a warm and well-mixed oligotrophic surface layer and a cooler and more nutrient rich, deeper water layer (Menezes <i>et al.</i> 2013).
Waves	Sea surface waves within the NWMR, generally reflect the direction of the synoptic winds and flow predominately from the south-west in the summer and east in winter (Pearce <i>et al.</i> , 2003). The NWS within the NWMR is a known area of internal wave generation. Both internal tides and internal waves are thought to be more prevalent during summer months due to the increased stratification of the water column (DEWHA, 2007a). Along the continental slope of the NWMR, strong internal waves and interaction between semi-diurnal tidal currents and seabed topographic features facilitates upwelling events and localised productivity events (Holloway, 2001).
Tides	Tides on the NWS (NWMR) increase as the water moves from deep towards the shallower coast. The highest offshore tides are experienced at the border of the Browse and Canning basins. The smallest tides are experienced at the Exmouth Plateau, near the coast. Tides of NWS (NWMR) are predominantly semi-diurnal (two highs and two lows each day), but with increasing importance of the diurnal (once per day) inequality at the southern and northern extremities of the NWS.

¹ http://www.bom.gov.au/jsp/ncc/climate_averages/temperature/index.jsp, accessed 21 January 2021.

Receptor	Description
	The tide range—represented by the Mean Spring Range (MSR)—increases northwards along the coast from 1.4 m at North-west Cape (Point Murat) to 7.7 m at Broome, before decreasing again (apart from local amplification in King Sound and Collier Bay) to about 5 m off Cape Londonderry. The MSR then increases again through Joseph Bonaparte Gulf and on up 5.5 m at Darwin (RPS, 2016).

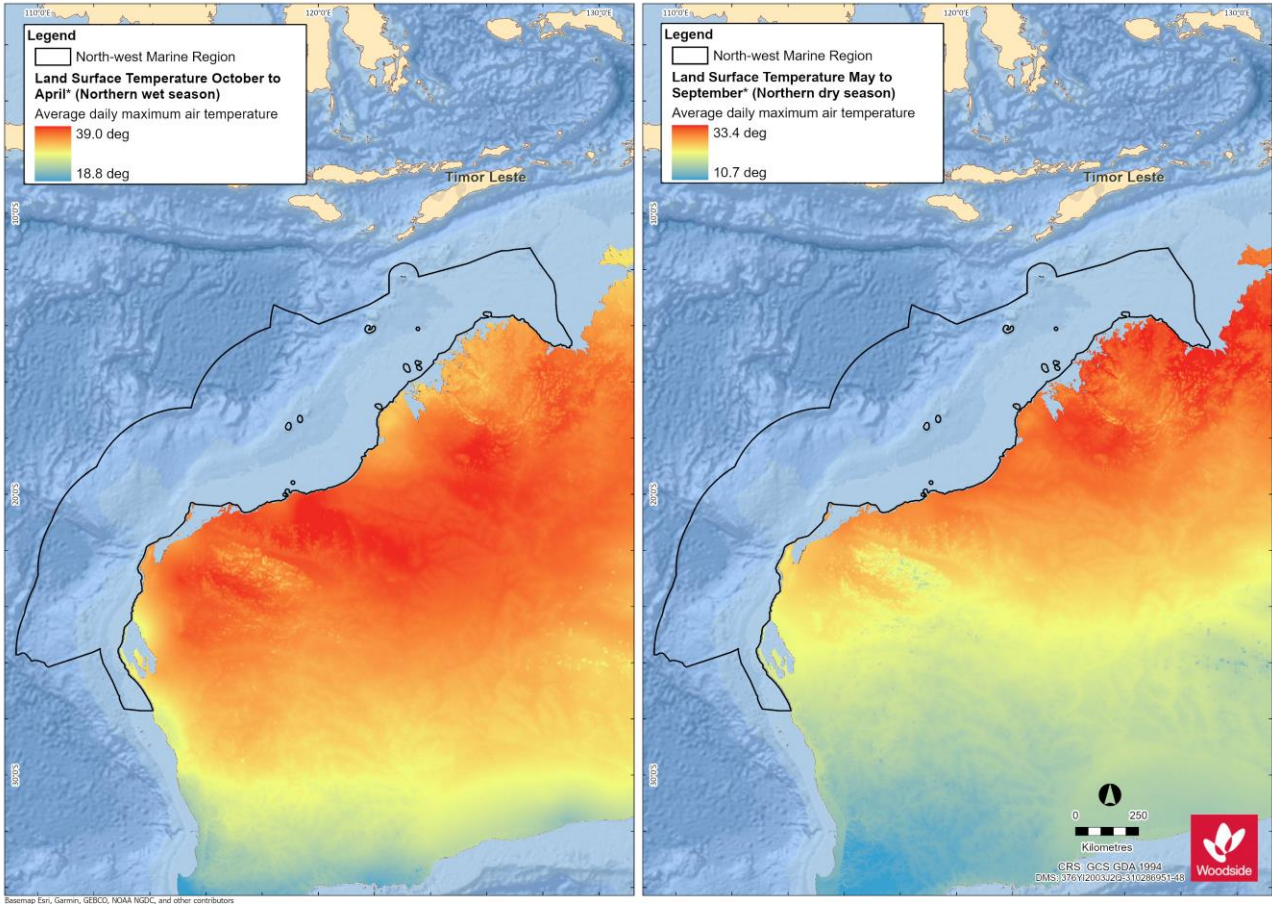


Figure 2-2. Average daily maximum air temperature for land surface adjacent to NWMR: (a) summer (northern wet season) and (b) winter (northern dry season)

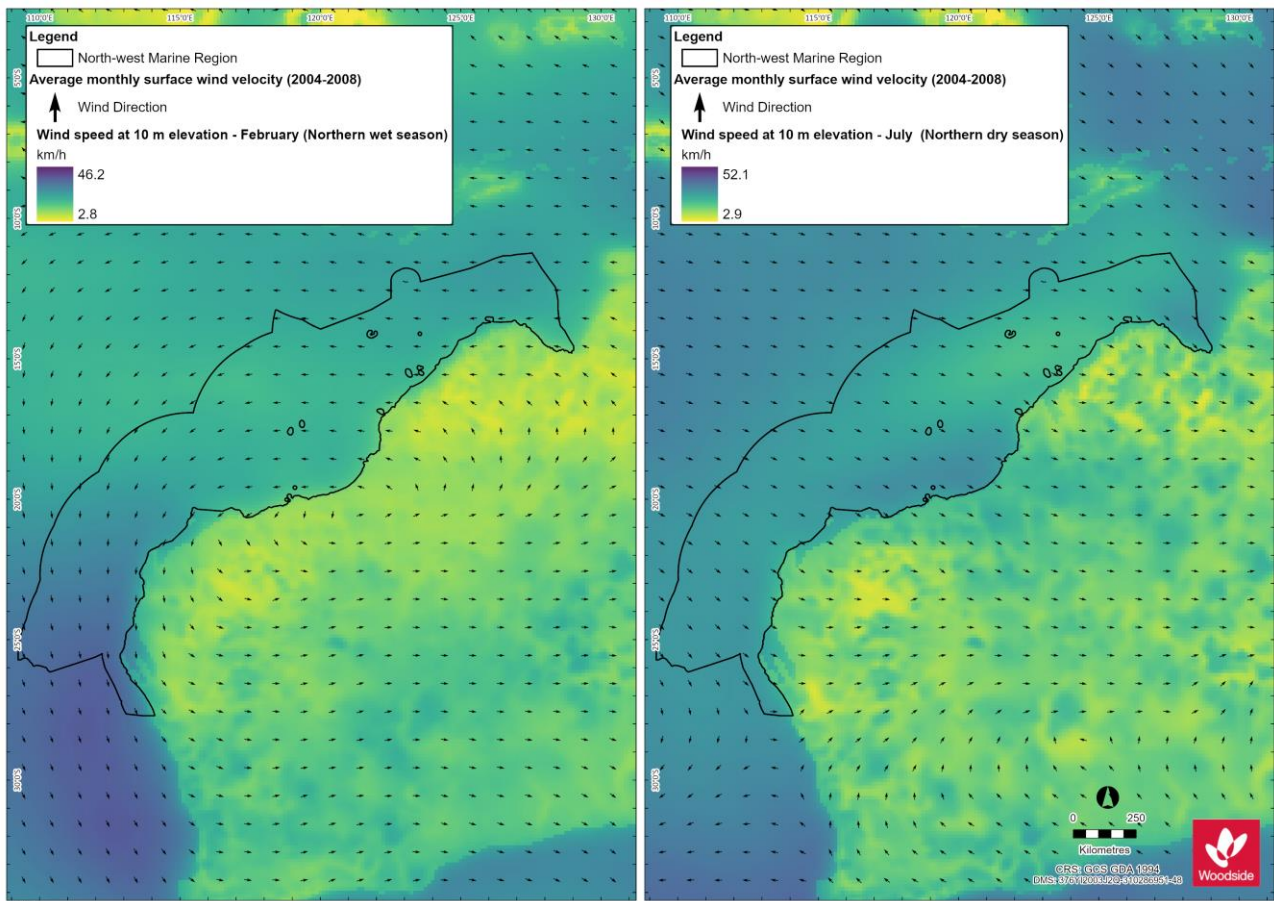


Figure 2-3. Average monthly surface wind direction and velocity for NWMR: (a) summer (February, northern wet season) and (b) winter (July, northern dry season)

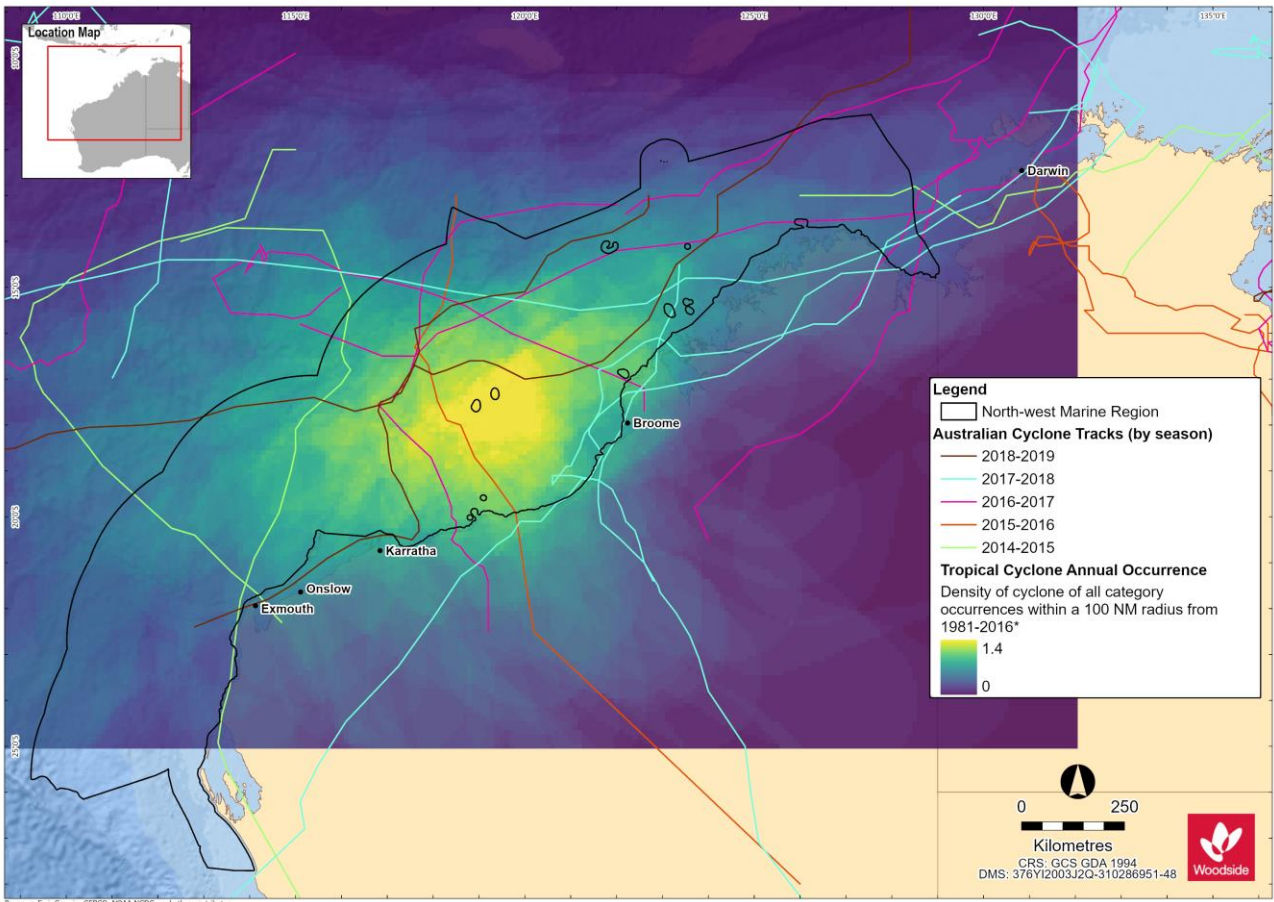


Figure 2-4. Tropical cyclone annual occurrence and cyclone tracks for NWMR

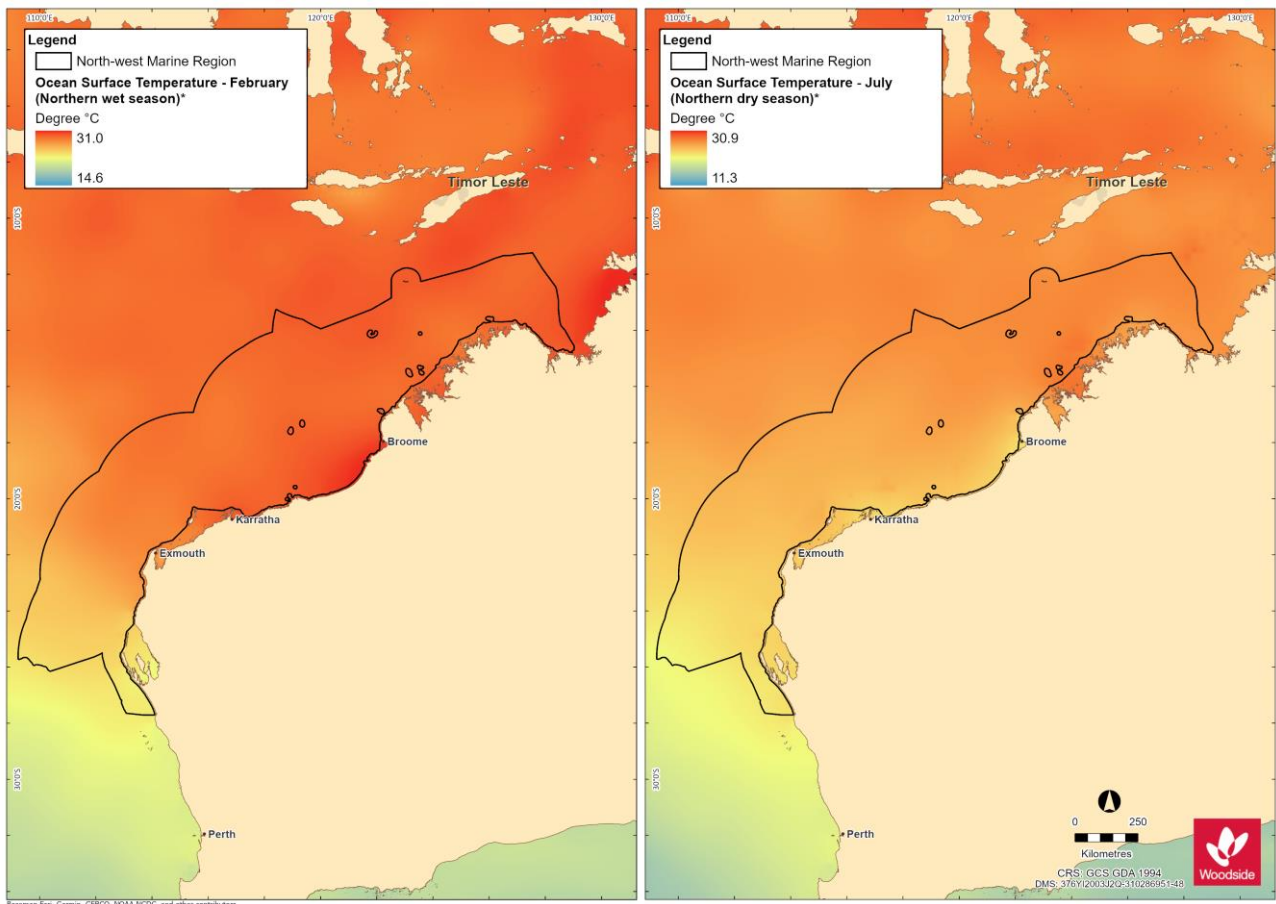


Figure 2-5. Ocean surface temperature for NWMR: (a) summer (February, northern wet season) and (b) winter (July, northern dry season)

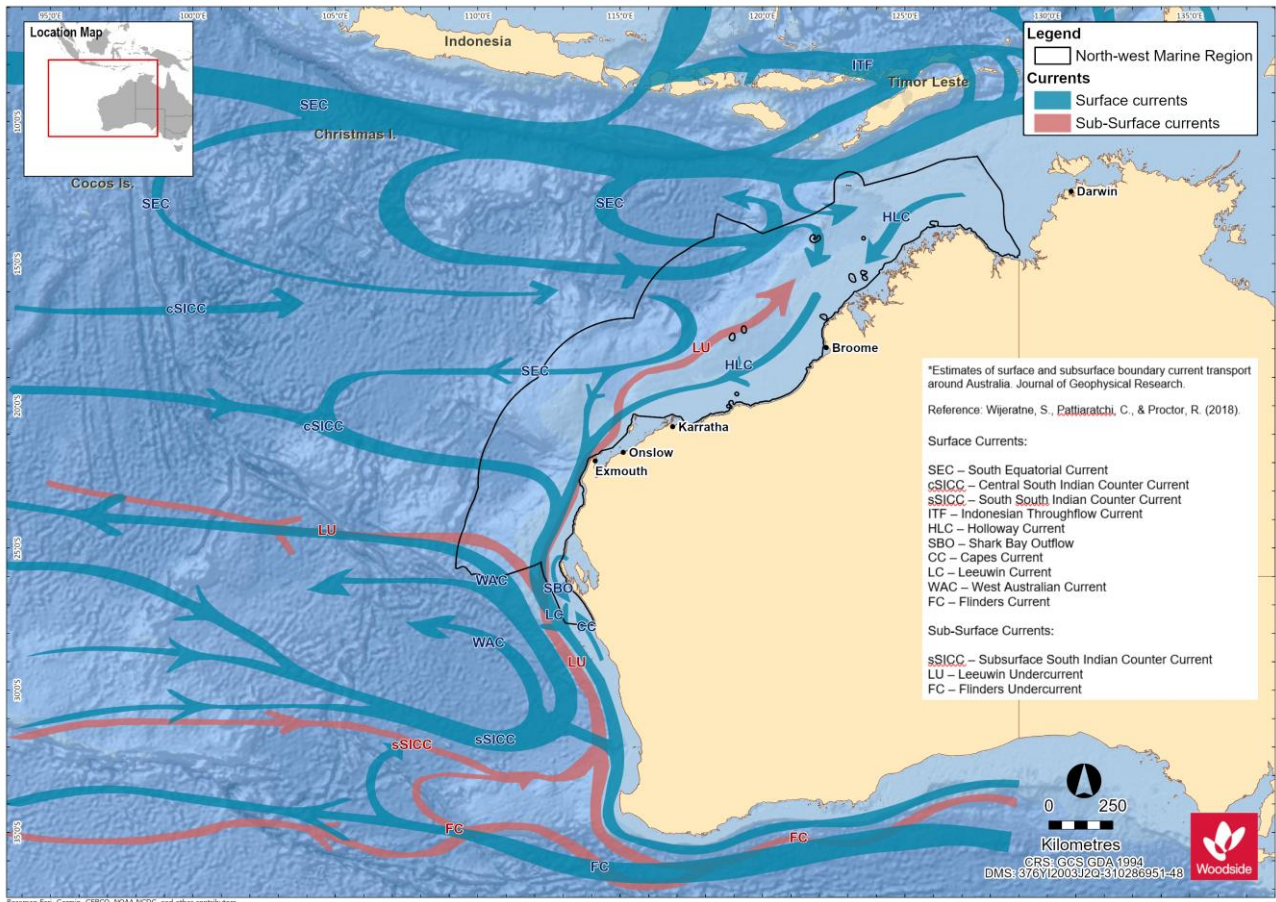


Figure 2-6. Ocean surface and sub-surface currents of the NWMR and wider region

2.3.1 Browse

Table 2-4 Summary meteorology and oceanography for Browse (refer to Appendix B for supporting metocean figures)

Receptor	Description
Meteorology	
Seasonal patterns	The Browse area overlapping the Kimberley marine system experiences tropical monsoon climate with two distinct seasons: the wet season from December to March and dry season from April to November.
Air temperature	The mean annual air temperature recorded at Troughton Island between 2010 and 2020 ranged from 30.1°C in 2011 to 32.6°C in 2016 and highest mean monthly air temperatures were recorded for the months of November and December (BOM, 2021b).
Rainfall	Rainfall recorded from Troughton Island in the Browse basin ranged from barely detectable (<1 mm) mean monthly level to >100 mm in December to March, with the highest rainfall recorded for January. Reflecting the wet monsoon season of the Kimberley marine system (BOM, 2021c).
Wind	The dry season experiences high pressure systems that bring east to south-easterly winds with average wind speeds during the season of approximately 16.6 km/hr and maximum wind gusts of 65 km/hr. In contrast the wet season brings predominately westerly winds with average wind speeds approximately 17 km/hr and maximum gusts exceeding 100 km/hr (generally associated with tropical cyclones (MetOcean Engineers, 2005).
Oceanography	
Currents	Surface currents exhibit seasonal directionality, with flow to the south-west during March to June and more variable outside this period (Woodside, 2019). This is consistent with the stronger Leeuwin Current flow during winter months, with more variable currents driven by local wind stress during periods of weaker Leeuwin Current flow.

2.3.2 North West Shelf / Scarborough

Table 2-5 Summary meteorology and oceanography for the North West Shelf and Scarborough (refer to Appendix B for supporting metocean figures)

Receptor	Description
Meteorology	
Seasonal patterns	The NWS and Scarborough areas experience the monsoonal climate of the wider NWMR with a distinct wet and dry seasonal regime and transitions periods between seasons.
Air temperature	Air temperatures as measured at the North Rankin A platform on NWS ranged from a maximum average of 39.5°C in summer to a minimum average temperature of 15.6°C in winter (Woodside, 2012).
Rainfall	Rainfall patterns annually reveal the wet season with highest rainfalls during the late summer, often associated with the passage of tropical low-pressure systems and cyclones. Rainfall in the dry season is typically extremely low. (Pearce <i>et al.</i> 2003).
Wind	Winds are typically from the southwest during the wet season (summer) and tending from the south-east during the dry season (winter). The summer south-westerly winds are driven by high pressure cells that pass from west to east over the Australian continent. During the winter period, the relative position of the high-pressure cells shifts further north, leading to prevailing south-easterly winds from the mainland (Pearce <i>et al.</i> 2003).
Oceanography	
Currents	The large-scale ocean currents of the NWMR, primarily the Indonesian Throughflow and Leeuwin Current (and Holloway Current), are the primary influence on the NWS and Scarborough areas. The ITF and Leeuwin Current are strongest during the late summer and winter and flow reversals to the north-east, typically short-lived and weak, when there are strong south-westerly winds can generate localised upwelling on the shelf edge (Holloway and Nye, 1985; James <i>et al.</i> 2004 and Condie <i>et al.</i> 2006).

2.3.3 North-west Cape

Table 2-6 Summary meteorology and oceanography for the North-west Cape (refer to Appendix B for supporting metocean figures)

Receptor	Description
Meteorology	
Seasonal patterns	The climate of the NWMR is dry tropical exhibiting a hot summer season and a mild winter season. There are often distinct transition periods between the summer and winter regimes, characterised by periods of relatively low winds.
Air temperature	Air temperatures in the North-west Cape area range from high summer temperatures (maximum average of 37.5°C) and mild winter temperatures (minimum average of 12.2°C).
Rainfall	Rainfall typically occurs during the summer, with highest rainfall during later summer and autumn, often associated with the passage of tropical low-pressure systems and cyclones. Rainfall is typically low in winter.
Wind	Winds vary seasonally, generally from the south-west quadrant during summer months and the south, south-east quadrant during the autumn and winter months. The summer south-westerly winds are driven by high pressure cells that pass from west to east over the Australian continent. Winds typically weaken and are more variable during the transitional period between the summer and winter seasons, generally between April to August.
Oceanography	
Currents	Surface currents exhibit seasonal directionality, with flow to the south-west during March to June and more variable outside this period (Woodside, 2016). This is consistent with the stronger Leeuwin Current flow during winter months, with more variable currents driven by local wind stress during periods of weaker Leeuwin Current flow.

2.4 Physical Environment of NWMR

Based on the Integrated Marine and Coastal Regionalisation of Australia (IMCRA) Version 4.0, there are eight provincial bioregions that occur within the NWMR, which are based on patterns of demersal fish diversity, benthic habitat and oceanographic data (Commonwealth of Australia, 2006), **Figure 2-7**. Of the eight provincial bioregions that occur within the NWMR, these include four offshore (~65% of total NWMR area) and four shelf (~35% of total NWMR area) bioregions (Baker *et al.*, 2008).

The NWMR is a tropical carbonate margin that comprises an extensive area of shelf, slope and abyssal plain/deep ocean floor, as well as complex areas of bathymetry such as plateau, terraces and major canyons (Harris *et al.*, 2005). A series of reefs are located on the outer shelf/slope of the NWMR, including Ashmore, Cartier, Scott and Seringapatam reefs (Baker *et al.*, 2008). The distribution of seafloor geomorphic features has been systematically mapped over much of the Australian margin and adjacent seafloor. The mapped area can be divided into 10 geomorphic regions, of which the NWMR overlays two; the Western Margin and Northern Margin (Harris *et al.*, 2005). Most of the region consists of either continental slope (61%) or continental shelf (28%) (DEWHA, 2007a) with more than 40% of the NWMR having a water depth less than 200 m. The shallow shelf is contrasted by features such as the Cuvier and Argo abyssal plains, which reach depths more than five kilometres. A unique feature of the region is the significant narrowing of the continental shelf around North-west Cape (approximately 7 km wide) from the broad continental shelf in the north of the region (approximately 400 km wide at Joseph Bonaparte Gulf) (DEWHA, 2007a), **Figure 2-8**.

The geological history of the region, as well as its geomorphology and oceanography, has influenced the composition and distribution of sediments (DEWHA, 2007a). The sedimentology of the NWMR is dominated by marine carbonates, which show a broad zoning and fining with water depth. Main trends of the NWMR sediments include a tropical carbonate shelf that is dominated by sand and gravel, an outer shelf/slope zone that is dominated by mud and a relatively homogenous rise and abyssal plain/deep ocean floor that is dominated by non-carbonate mud (Baker *et al.*, 2008), **Figure 2-9**.

The distribution and resuspension of sediments on the inner shelf is strongly influenced by the strength of tides across the continental shelf as well as episodic events such as cyclones. Further offshore, on the mid to outer shelf and on the slope itself, sediment movement is primarily influenced by ocean currents and internal tides (DEWHA, 2007a).

This variation in bathymetry and interactions with oceanographic processes provides a diversity of habitats to marine fauna and flora within the NWMR.

2.5 Air quality

The ambient air quality of all three marine regions is largely unpolluted due to the extent of the open ocean area, the activities currently carried out in each and the relative remoteness of each region.

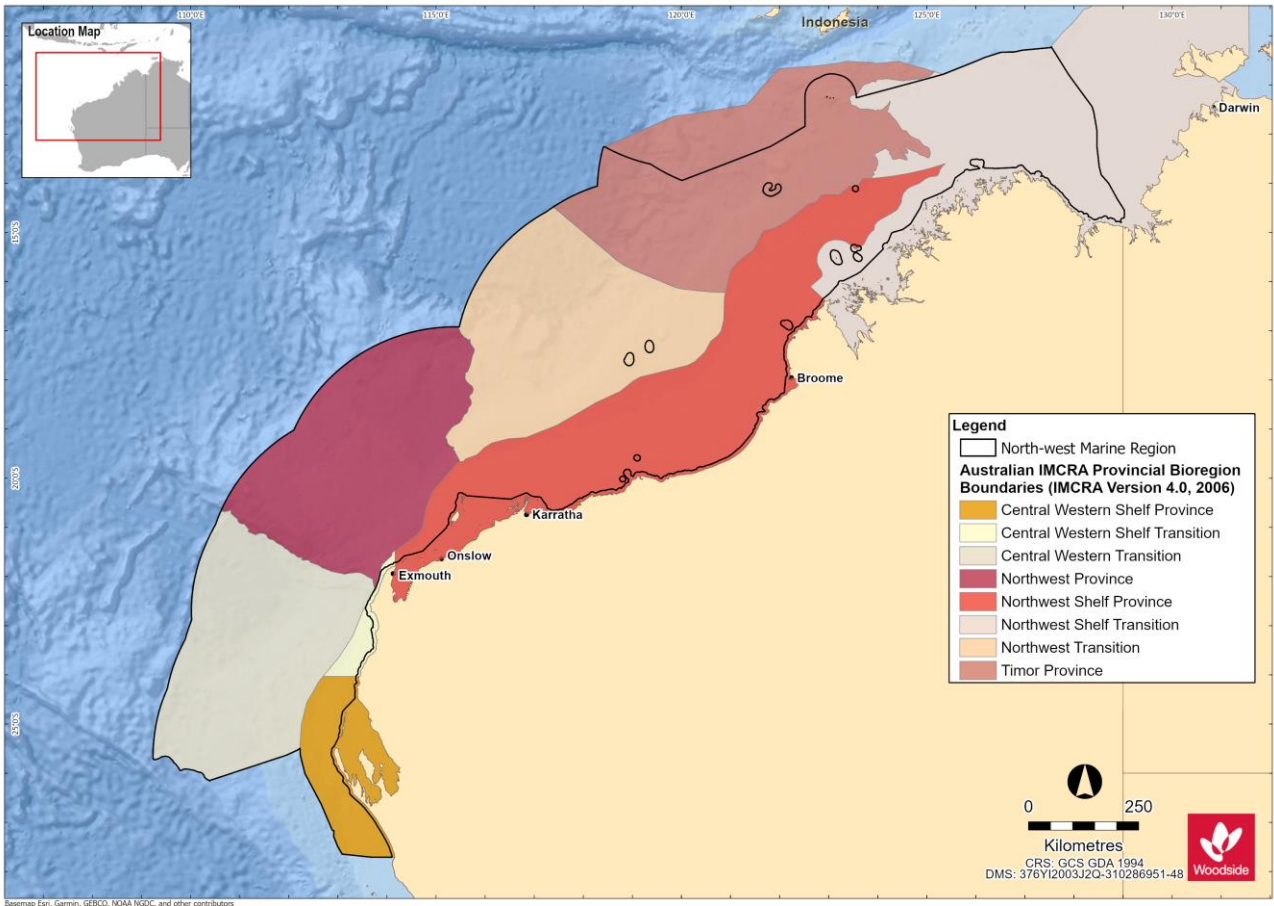


Figure 2-7. The eight provincial bioregions of the NWMR (Commonwealth of Australia, 2006)

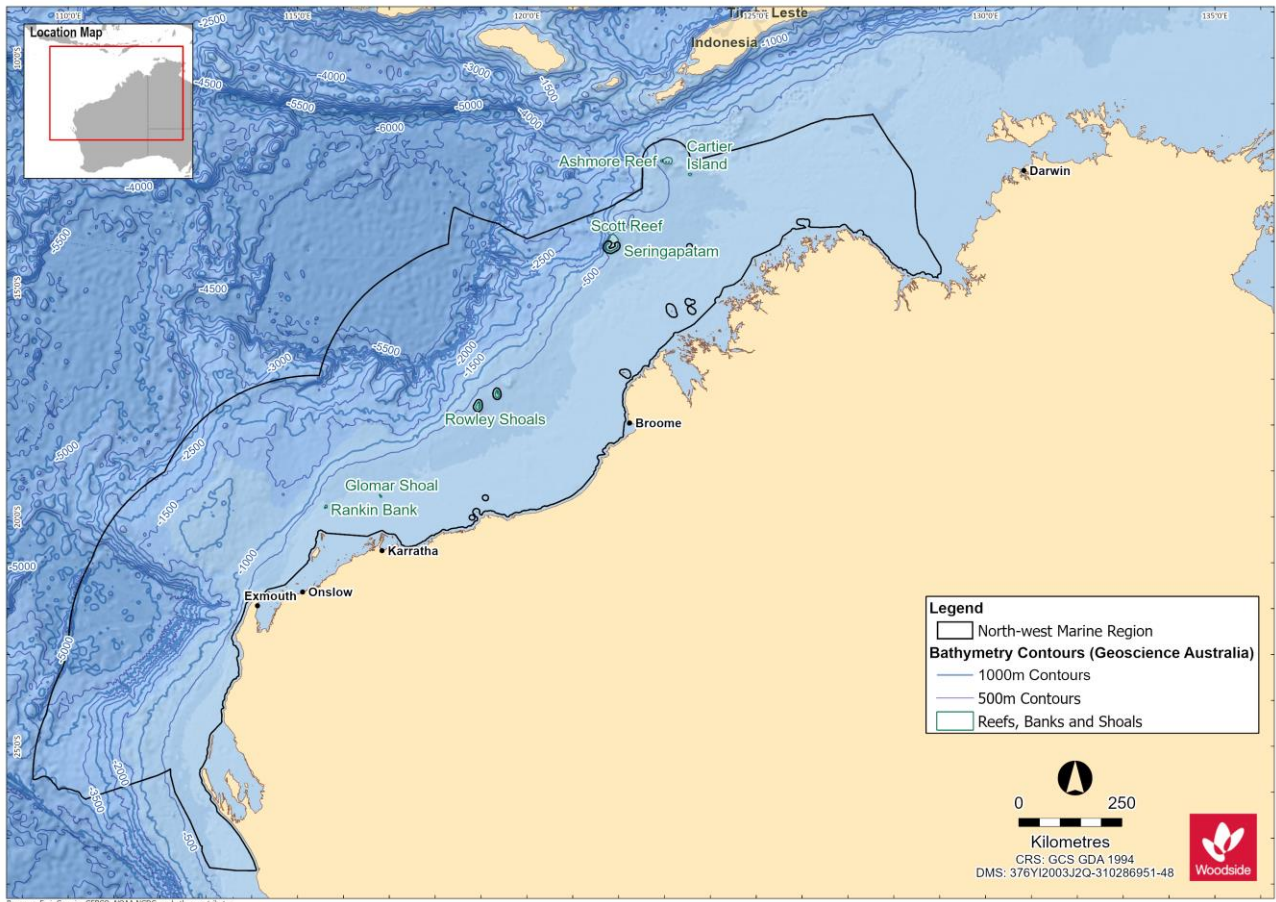


Figure 2-8. Bathymetry of the NWMR

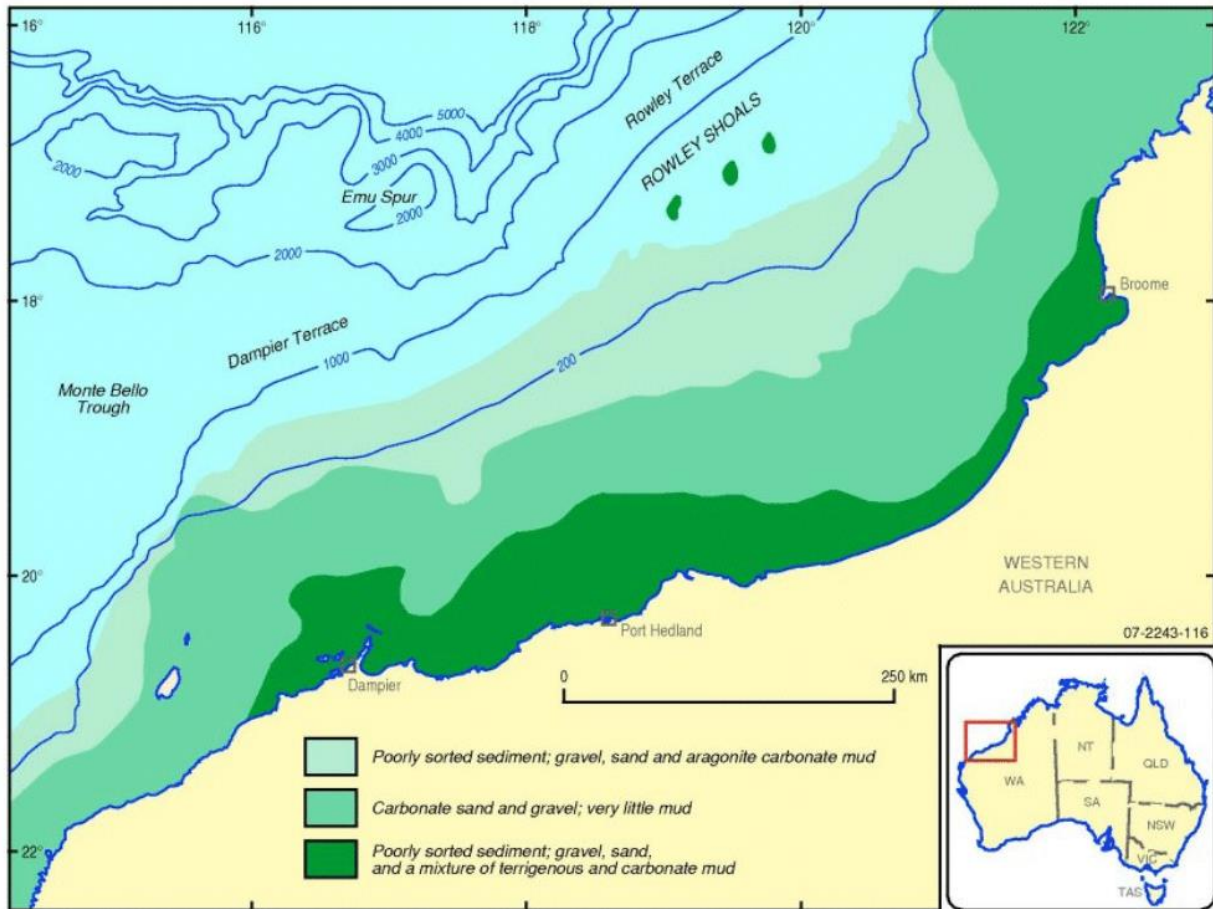


Figure 2-9. Overview of the seabed sediments of the NWMR (Baker *et al.*, 2008)

3. MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE (EPBC ACT)

3.1 Summary of Matters of National Environmental Significance (MNES)

This section summarises the matters of national environmental significance (MNES) reported for the three bioregions; NWMR (**Table 3-1**), SWMR (**Table 3-2**) and NMR (**Table 3-3**), based on the Protected Matters search reports (**Appendix A**).

Additional information on these MNES are provided in subsequent sections (referenced below).

Table 3-1 Summary of MNES identified by the EPBC Act Protected Matters Search Tool (PMST) as potentially occurring within the NWMR

MNES	Number	Description	Section of this Document
World Heritage Properties	2	Shark Bay The Ningaloo Coast	Section 10
National Heritage Places	5	Shark Bay The Ningaloo Coast The West Kimberley The Dampier Archipelago (including Burrup Peninsula) Dirk Hartog Landing Site 1616	Section 10
Wetlands of International Importance (Ramsar)	3	Ashmore Reef National Nature Reserve Eighty Mile Beach Roebuck Bay ¹	Section 10
Commonwealth Marine Area	2	EEZ and Territorial Sea Key Ecological Features (KEFs) Australian Marine Parks (AMPs) Australian Whale Sanctuary Extended Continental Shelf	Section 9 Section 10
Listed Threatened Ecological Communities	1	Monsoon vine thickets on the coastal sand dunes of Dampier Peninsula	Terrestrial community and not considered further
Listed Threatened Species	70	Refer NWMR PMST report (Appendix A)	Section 5 – Section 8
Listed Migratory Species	84	Refer NWMR PMST report (Appendix A)	Section 5 – Section 8

¹ Roebuck Bay is a designated Wetland of International Importance (Ramsar site), which was not included in the PMST Report (**Appendix A**).

Table 3-2 Summary of MNES identified by the EPBC Act Protected Matters Search Tool (PMST) as potentially occurring within the SWMR

MNES	Number	Description	Section of this Document
World Heritage Properties	0	N/A	N/A
National Heritage Places	3	Cheetup Rock Shelter Batavia Shipwreck Site and Survivor Camps Area 1629 – Houtman Abrolhos HMAS Sydney II and HSK Kormoran Shipwreck Sites	Section 10
Wetlands of International Importance (Ramsar)	4	Becher Point Wetlands Forrestdale and Thomsons Lakes Peel-Yalgorup System Vasse-Wonnerup System	Section 10
Commonwealth Marine Area	2	EEZ and Territorial Sea KEFs AMPs Australian Whale Sanctuary Extended Continental Shelf	Section 9 Section 10
Listed Threatened Ecological Communities	3	Banksia Woodlands of the Swan Coastal Plain ecological community Proteaceae Dominated Kwongan Shrublands of the Southeast Coastal Floristic Province of Western Australia Tuart (<i>Eucalyptus gomphocephala</i>) Woodlands and Forests of the Swan Coastal Plain ecological community	Terrestrial communities and not considered further
Listed Threatened Species	65	Refer SWMR PMST report (Appendix A)	N/A
Listed Migratory Species	67	Refer SWMR PMST report (Appendix A)	N/A

Table 3-3 Summary of MNES identified by the EPBC Act Protected Matters Search Tool (PMST) as potentially occurring within the NMR

MNES	Number	Description	Section of this Document
World Heritage Properties	0	N/A	N/A
National Heritage Places	0	N/A	N/A
Wetlands of International Importance (Ramsar)	0	N/A	N/A
Commonwealth Marine Area	2	EEZ and Territorial Sea KEFs AMPs Australian Whale Sanctuary Extended Continental Shelf	Section 9 Section 10
Listed Threatened Ecological Communities	0	N/A	N/A
Listed Threatened Species	33	Refer NMR PMST report (Appendix A)	N/A
Listed Migratory Species	70	Refer NMR PMST report (Appendix A)	N/A

3.2 Part 13 Statutory Instruments for EPBC Act Listed Threatened and Migratory Species in the NWMR, SWMR and NMR

A screening process was conducted to identify which EPBC Act listed threatened and migratory species, and associated Part 13 statutory instruments, are relevant in the context of the assessment of impacts and risks associated with petroleum activities in each of the Woodside activity areas, using the following criteria:

- overlap between the Woodside activity areas with habitat critical for the survival of marine turtles, and with BIAs (overlapping the marine environment) for any listed threatened species as reported in the PMST searches;
- published literature, unpublished reports and/or credible anecdotal information (e.g. feedback from stakeholders) indicating species presence/occurrence within the Woodside activity areas;
- temporal overlap between the likely timing of petroleum activities and peak periods for key behaviours (e.g. breeding, nesting, calving, resting, foraging, migration); and
- environmental aspects associated with petroleum activities have been identified as a key threat to a species in a Part 13 statutory instrument (e.g. anthropogenic noise, light emissions, marine debris).

Relevant EPBC Act threatened and migratory species and their Part 13 statutory instruments are listed in **Table 3-4**. For the full list of EPBC Act listed species for each marine bioregion refer to the PMST reports (**Appendix A**).

Table 3-4 Summary of MNES identified by the EPBC Act Protected Matters Search Tool (PMST) to be considered for impact or risk evaluation for Woodside operations

Species	EPBC Act Part 13 Statutory Instrument
All vertebrate marine fauna	Threat Abatement Plan for the impacts of marine debris on vertebrate marine life (Commonwealth of Australia, 2018)
Marine Mammals	
Blue whale	Conservation Management Plan for the Blue Whale: A Recovery Plan under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> 2015–2025 (Commonwealth of Australia, 2015a)
Southern right whale	Conservation Management Plan for the Southern Right Whale: A Recovery Plan under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> 2011–2021 (DSEWPAC, 2012d)
Sei whale	Conservation Advice <i>Balaenoptera borealis</i> sei whale (Threatened Species Scientific Committee, 2015a)
Humpback whale	Conservation Advice <i>Megaptera novaeangliae</i> humpback whale (Threatened Species Scientific Committee, 2015b)
Fin whale	Conservation Advice <i>Balaenoptera physalus</i> fin whale (Threatened Species Scientific Committee, 2015c)
Australian sea lion	Recovery Plan for the Australian Sea Lion (<i>Neophoca cinerea</i>) 2013 (DSEWPAC, 2013a) (due to expire in October 2023) Conservation Advice <i>Neophoca cinerea</i> Australian Sea Lion (Threatened Species Scientific Committee, 2020a) (in effect under the EPBC Act from 23-Dec-2020)
Marine Reptiles	
All marine turtle species (loggerhead, green, leatherback, hawksbill, flatback, olive ridley)	Recovery Plan for Marine Turtles in Australia 2017-2027 (Commonwealth of Australia, 2017)
Short-nosed sea snake	Approved Conservation Advice for <i>Aipysurus apraefrontalis</i> (Short-nosed Sea Snake) (DSEWPAC, 2011a)
Leaf-scaled sea snake	Approved Conservation Advice for <i>Aipysurus foliosquama</i> (Leaf-scaled Sea Snake) (DSEWPAC, 2011b)
Fishes, Sharks, Rays and Sawfishes	
Grey nurse shark (west coast population)	Recovery Plan for the Grey Nurse Shark (<i>Carcharias taurus</i>) 2014 (DOE, 2014)
White shark	Recovery Plan for the White Shark (<i>Carcharodon carcharias</i>) 2013 (DSEWPAC, 2013b)
Whale shark	Conservation Advice <i>Rhincodon typus</i> whale shark (Threatened Species Scientific Committee, 2015d)
All sawfishes (largetooth, green, dwarf, speartooth, narrow)	Sawfish and River Sharks Multispecies Recovery Plan (Commonwealth of Australia, 2015b)

Species	EPBC Act Part 13 Statutory Instrument
Seabirds	
Migratory seabird species	Draft Wildlife Conservation Plan for Migratory Seabirds (Commonwealth of Australia, 2019)
Southern giant petrel	National recovery plan for threatened albatrosses and giant petrels 2011–2016 (DSEWPAC, 2011c)
Indian yellow-nosed albatross	National recovery plan for threatened albatrosses and giant petrels 2011–2016 (DSEWPAC, 2011c)
Abbott's booby	Conservation Advice for the Abbott's booby - <i>Papasula abbotti</i> (Threatened Species Scientific Committee, 2020b)
Australian fairy tern	Approved Conservation Advice for <i>Sterna nereis nereis</i> (Fairy Tern) (DSEWPAC, 2011d)
Australian lesser noddy	Conservation Advice <i>Anous tenuirostris melanops</i> Australian lesser noddy (Threatened Species Scientific Committee, 2015e)
Soft-plumaged petrel	Conservation Advice <i>Pterodroma mollis</i> soft-plumaged petrel (Threatened Species Scientific Committee, 2015f)
Shorebirds	
Migratory shorebird species	Wildlife Conservation Plan for Migratory Shorebirds (Commonwealth of Australia, 2015c)
Eastern curlew, far eastern curlew	Conservation Advice <i>Numenius madagascariensis</i> eastern curlew (DOE, 2015a)
Curlew sandpiper	Conservation Advice <i>Calidris ferruginea</i> curlew sandpiper (DOE, 2015b)
Great knot	Conservation Advice <i>Calidris tenuirostris</i> Great knot (Threatened Species Scientific Committee, 2016a)
Red knot, knot	Conservation Advice <i>Calidris canutus</i> Red knot (Threatened Species Scientific Committee, 2016b)
Bar-tailed godwit (<i>menzbieri</i>)	Conservation Advice <i>Limosa lapponica menzbieri</i> Bar-tailed godwit (northern Siberia) (Threatened Species Scientific Committee, 2016c)
Greater sand plover	Conservation Advice <i>Charadrius leschenaultii</i> Greater sand plover (Threatened Species Scientific Committee, 2016d)
Lesser sand plover	Conservation Advice <i>Charadrius mongolus</i> Lesser sand plover (Threatened Species Scientific Committee, 2016e)

4. HABITAT AND BIOLOGICAL COMMUNITIES

4.1 Regional context

The NWMR habitats range from nearshore benthic primary producer habitats such as seagrass beds, coral communities and mangrove forests, to offshore soft sediment seabed habitats and submerged and emergent reef systems. These habitats support biological communities that range from low density sessile and mobile benthos, such as sponges, molluscs and echinoids (with noted areas of sponge hotspot diversity) in offshore soft sediment habitat (DSEWPAC, 2012a) to complex, diverse, remote coral reef systems.

Benthic primary producer habitats, such as seagrass beds, coral communities and mangrove forests within the SWMR, are described as a mixture of tropical and temperate species, due to the seasonal influences of the tropical waters carried south by the Leeuwin Current and the temperate waters carried north by the Capes Current (DSEWPAC, 2012b).

The NMR shares similar habitat types to the NWMR. The predominant habitat of the region includes soft muddy sediments on relatively flat terrain. Other habitat types include seagrasses, reefs, shoals and coastal habitats such as mangroves and coastal wetlands (Rochester *et al.*, 2007).

The summary of key habitats and biological communities provided in the following sub-sections is focused on the primary features of relevance to the activity areas within the NWMR – primarily the offshore habitats of the continental shelf and slope, submerged shoals and banks, and remote oceanic reef systems of recognised conservation value.

4.2 Biological Productivity of NWMR

Primary productivity of the NWMR is generally low and appears to be largely driven by offshore influences (Brewer *et al.*, 2007), with periodic upwelling events and cyclonic influences driving coastal productivity with nutrient recycling and advection. Seasonal weather patterns also influence the delivery of nutrients from deep-water to shallow water. Cyclones and north-westerly winds during the North-west monsoon (approximately November–March) and the strong offshore winds of the South-east monsoon (approximately April–September) facilitate the upwelling and mixing of nutrients from deep-water to shallow water environments (Brewer *et al.*, 2007).

The Indonesian Throughflow (ITF) has an important effect on productivity in the northern areas of the Region. Generally, its deep, warm and low nutrient waters suppress upwelling of deeper comparatively nutrient-rich waters, thereby forcing the highest rates of primary productivity to occur at depths associated with the thermocline. When the ITF is weaker, the thermocline lifts bringing deeper, more nutrient-rich waters into the photic zone and hence resulting in conditions favourable to increased productivity (DEWHA, 2007a). Similarly, the Leeuwin Current has a significant role in determining primary productivity in the southern areas of the NWMR. As with the ITF, the overlying warm oligotrophic waters of the Leeuwin Current suppress upwelling. A subsurface chlorophyll maximum is therefore formed at a depth in the water column where nutrients and light are sufficient for photosynthesis to proceed. Seasonal changes in the strength of the Leeuwin Current influence primary productivity levels and seasonal interactions between the Leeuwin and Ningaloo currents in the south of the NWMR are believed to be particularly important (DEWHA, 2007a).

Internal tides (defined as internal waves generated by the barotropic tide) are a striking characteristic of many parts of the NWMR and are associated with highly stratified water columns. Internal waves (solitons), which can raise cooler, generally more nutrient rich water higher in the water column, are generated between water depths of 400 m and 1000 m where bottom topography results in a significant change in water depth over a relatively short distance. Cyclones are episodic events in the NWMR that contribute to spikes in productivity through enrichment of surface water layers due to enhanced vertical mixing of the water column. Temporary increases in primary productivity as a result of cyclones generally last between one and two weeks, and it is believed that the impacts of

cyclones are generally limited to waters less than 100 m deep and affect benthic communities more substantially than pelagic systems (DEWHA, 2007a).

Water depth also has a significant overriding influence over productivity in the marine environment, due to its influence on light availability. This is reflected by distinct onshore and offshore assemblages of major pelagic groups of phytoplankton, microzooplankton, mesoplankton and ichthyoplankton. Productivity booms are thought to be triggered by seasonal changes to physical drivers or episodic events, as detailed above, which result in rapid increases in primary production over short periods, followed by extended periods of lower primary production. The trophic systems in the NWMR are able to take advantage of blooms in primary production, enabling nutrients generated to be used by different groups of consumers over long periods (DEWHA, 2007a).

Little detailed information is available about the trophic systems in the NWMR. The utilisation of available nutrients is thought to differ between pelagic and benthic environments, influenced by water depth and vertical migration of some species groups in the water column. In the pelagic system, it is thought that approximately half of the nutrients available are utilised by microzooplankton (e.g. protozoa) with the remainder going to macro/meso-zooplankton (e.g. copepods). As primary and secondary consumers, gelatinous zooplankton (e.g. salps, coelenterates) and jellyfish are thought to play an important role in the food web, contributing a significant proportion of biomass in the marine system during and for periods after booms in primary productivity. Salps are semi-transparent, barrel-shaped marine animals that can reproduce quickly in response to bursts in primary productivity and provide a food source for many pelagic fish species (DEWHA, 2007a).

4.3 Planktonic Communities in the NWMR

The NWMR has two distinct phytoplankton assemblages; a tropical oceanic community in offshore waters and a tropical shelf community confined to the NWS (Hallegraeff, 1995). MODIS (Moderate Resolution Imaging Spectrometer) satellite datasets from the NWMR indicates that chlorophyll (and thus phytoplankton) levels are low in summer months (December to March) and higher in the winter months (Schroeder *et al.*, 2009). Low chlorophyll levels during summer months may be a result of lower plankton productivity during the wet season or lower nutrient inputs from warm surface waters dominant during summer. However, it is likely that much of the primary production is taking place below the surface, where the MODIS imagery does not penetrate (Schroeder *et al.*, 2009). The winter months are relatively cloud free and surface chlorophyll is high throughout most of the region.

Zooplankton and may include organisms that complete their lifecycle as plankton (e.g. copepods, euphausiids) as well as larval stages of other taxa such as fishes, corals and molluscs. Peaks in zooplankton such as mass coral spawning events (typically in March and April) (Rosser and Gilmour, 2008) and fish larvae abundance (CALM, 2005a) can occur throughout the year. Spatial and temporal patterns in the distribution and abundance of macro-zooplankton on the North-west Shelf are influenced by sporadic climatic and oceanographic events, with large inter-annual changes in assemblages (Wilson *et al.*, 2003). Amphipods, euphausiids, copepods, mysids and cumaceans are among the most common components of the zooplankton in the region (Wilson *et al.*, 2003).

4.3.1 Browse

Phytoplankton within the Browse activity area is expected to reflect the conditions of the NWMR. There is a tendency for offshore phytoplankton communities in the NWMR to be characterised by smaller taxa (e.g. bacteria), whereas shelf waters are dominated by larger taxa such as diatoms (Hanson *et al.*, 2007).

Zooplankton within the activity area may include organisms that complete their lifecycle as plankton (e.g. copepods, euphausiids) as well as larval stages of other taxa such as fishes, corals and molluscs. Peaks in zooplankton such as mass coral spawning events (typically in March and April) (Rosser and Gilmour, 2008; Simpson *et al.*, 1993) and fish larvae abundance (CALM, 2005a) can occur throughout the year.

The influence of the Indonesian Throughflow restricts upwelling across the Kimberley System (approximately equates to the Browse activity area). However, small-scale topographically associated current movements and upwellings are thought to occur, which inject nutrients into specific locations within the system and result in 'productivity hot-spots'. Similarly, internal waves, generated at the shelf break (e.g. west of Browse Island and around submerged cliffs) play a role in making nutrients available in the photic zone. Productivity within shallow nearshore waters is driven primarily by tidal movement and terrestrial runoff whereby nutrients are mixed by tidal action and new inputs of organic matter come from the land.

4.3.2 North-west Shelf / Scarborough

Plankton communities within the NWS / Scarborough activity area are expected to reflect conditions of the NWMR. Within the Pilbara system of the NWMR (approximately equates to the NWS / Scarborough activity area). Internal tides along the NWS and Exmouth Plateau result in the drawing of deeper cooler waters into the photic zone, stirring up nutrients and triggering primary productivity. Broadly the greatest productivity within this sub-system is found around the 200 m isobath associated with the shelf break.

4.3.3 North-west Cape

Waters of the North-west Cape experience a relatively high diversity of phytoplankton groups including diatoms, coccolithophorids and dinoflagellates. During the warmer months blooms of *Trichodesmium* occur in the region, these have been observed particularly on the frontal systems around Point Murat (Heyward *et al.*, 2000).

Average Leeuwin Current phytoplankton biomass is characteristic of low productivity oceanic waters like the Indian, Pacific and Atlantic Oceans (Hanson *et al.*, 2005). However, the Canyons linking the Cuvier Abyssal Plain and Cape Range Peninsula KEF are connected to the Commonwealth waters adjacent to Ningaloo Reef, and may also have connections to Exmouth Plateau. The canyons are thought to interact with the Leeuwin Current to produce eddies inside the heads of the canyons, resulting in waters from the Antarctic intermediate water mass being drawn into shallower depths and onto the shelf (Brewer *et al.* 2007). These waters are cooler and richer in nutrients and strong internal tides may also aid upwelling at the canyon heads (Brewer *et al.* 2007). The narrow shelf width (about 10 kilometres) near the canyons facilitates nutrient upwelling and relatively high productivity. This high primary productivity leads to high densities of primary consumers, such as micro and macro-zooplankton, such as amphipods, copepods, mysids, cumaceans, euphausiids (Brewer *et al.*, 2007).

4.4 Habitats and Biological Communities in the NWMR

4.4.1 Offshore Habitats and Biological communities

The NWMR has a large area of continental shelf and continental slope, with a range of bathymetric features such as canyons, plateaus, terraces, ridges, reefs, banks and shoals. The marine environment in this region is typified by tropical to sub-tropical marine ecosystems with diverse habitats from soft sediments, canyons, remote coral reefs and limestone pavement.

The key habitats and biological communities representative of the broader NWMR are summarised in **Table 4-1**.

The key habitats and biological communities representative of the broader SWMR and NMR are summarised in **Table 4-2** and **Table 4-3**.

4.4.2 Shoreline habitats and biological communities

The NWMR encompasses offshore and coastal waters, islands and mainland shoreline habitats typified by mangroves, tidal flats, saltmarshes, sandy beaches, and smaller areas of rocky shores. Each of these shoreline types has the potential to support different flora and fauna assemblages due to the different physical factors (e.g. waves, tides, light, etc.) influencing the habitat.

The key shoreline habitats representative of the broader NWMR are summarised in **Table 4-1**.

The key shoreline habitats representative of the broader SWMR and NMR are summarised in **Table 4-2** and **Table 4-3**.

Table 4-1 Habitats and biological communities within the NWMR

Habitat/Community	Browse	NWS / Scarborough	North-west Cape	Reference
Offshore habitats and biological communities				
Soft sediment with infauna	The offshore environment of the NWMR comprises predominately of seabed habitats dominated by soft sediments (sandy and muddy substrata with occasional patches of coarser sediments) and sparse benthic biota. The benthic communities inhabiting the predominantly soft, fine sediments of the offshore habitats are characterised by infauna such as polychaetes, and sessile and mobile epifauna such as crustacea (shrimp, crabs and squat lobsters) and echinoderms (starfish, cucumbers). The density of benthic fauna is typically lower in deep-sea sediment habitats (greater than 200 m) than in shallower coastal sediment habitats, but the diversity of communities may be similar.			
Soft sediment with hard substrate outcropping	A unique seafloor feature combining both soft sediment and hard substrates, including outcrops, terraces, continental slope, and escarpments. This habitat is found in offshore areas of the NWMR, often associated with key ecological features such as the Ancient coastline at 125 m depth contour KEF.			Section 9
	Ancient Coastline at 125 m Depth Contour KEF Continental Slope Demersal Fish Communities KEF	Ancient Coastline at 125 m Depth Contour KEF Continental Slope Demersal Fish Communities KEF	Ancient Coastline at 125 m Depth Contour KEF Continental Slope Demersal Fish Communities KEF	Section 9
Coral Reef	Coral reef habitats within the NWMR have a high species diversity that includes corals, and associated reef species such as fishes, crustaceans, invertebrates, and algae. Coral reef habitats of the offshore environment of the NWMR include remote oceanic reef systems, large platform reefs, submerged banks and shoals.			
	Browse Island Scott Reef Seringapatam Reef Ashmore Reef Cartier Island Hibernia Reef	Rowley Shoals (including Mermaid Reef, Clerke Reef, Imperieuse Reef) Glomar Shoal Rankin Bank	-	Section 10
Seagrass and Macroalgae communities	Seagrass beds and benthic macroalgae reefs are a main food source for many marine species and also provide key habitats and nursery grounds (Heck Jr. <i>et al.</i> , 2003; Wilson <i>et al.</i> , 2010). In the northern half of Western Australia, these habitats are restricted to sheltered and shallow waters, including around offshore reef systems, due to large tidal movement, high turbidity, large seasonal freshwater run-off and cyclones.			
	Scott Reef Seringapatam Reef Ashmore Reef	Rowley Shoals (including; Mermaid Reef, Clerke Reef, Imperieuse Reef)		Section 10
Filter Feeders/ heterotrophic	Filter feeder epifauna such as sponges, ascidians, soft corals and gorgonians are animals that feed by actively filtering suspended matter and food particles from water, by passing the water over specialised filtration structures (DEWHA, 2008). Filter feeders generally live in areas that have strong currents and hard substratum, often associated with deeper environments of the shoals and banks in the offshore NWMR.			
	Lower outer reef slopes of the oceanic reef	Glomar Shoal Rankin Bank	Cape Range canyon system	Section 10

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Habitat/Community	Browse	NWS / Scarborough	North-west Cape	Reference
	systems such as Scott Reef	Ancient coastline at 125 m depth contour KEF		
Sandy Beaches	Sandy beaches are dynamic environments, naturally fluctuating in response to external forcing factors (e.g. waves, currents, etc). Sandy beaches vary in length, width and gradient, and in sediment type, composition, and grain size throughout the NWMR, being found around islands and reefs in the offshore areas of the region.			
	Browse Island Scott Reef (Sandy Islet) Ashmore Reef Cartier Island	Montebello Islands Lowendal Islands Barrow Island	Muiron Islands	Section 10
Nearshore/coastal habitats and biological communities				
Coral Reef	Coral reef habitats typically found in nearshore regions of the NWMR include the fringing reefs around coastal islands and the mainland shore.			
	Kimberley East Holothuria and Long reefs Bonaparte and Buccaneer Archipelagos Montgomery Reef Adele complex (Beagle, Mavis, Albert, Churchill reefs, Adele Island)	Dampier Archipelago Montebello, Lowendal and Barrow Island Groups	Ningaloo Reef Exmouth Gulf Shark Bay	Section 10
Seagrass and Macroalgae communities	Seagrass beds and benthic macroalgae reefs are a main food source for many marine species and also provide key habitats and nursery grounds (Heck Jr. <i>et al.</i> , 2003; Wilson <i>et al.</i> , 2010). In the nearshore areas of the NWMR, these habitats are restricted to sheltered and shallow waters due to large tidal movement, high turbidity, large seasonal freshwater run-off and cyclones. These areas include in bays and sounds and around reef and island groups.			
	King Sound	Roebuck Bay Dampier Archipelago Montebello, Lowendal and Barrow Island Groups	Ningaloo Reef Exmouth Gulf Shark Bay	Section 10
Filter Feeders/ heterotrophic	Filter feeder epifauna such as sponges, ascidians, soft corals and gorgonians are animals that feed by actively filtering suspended matter and food particles from water, by passing the water over specialised filtration structures (DEWHA, 2007a). Filter feeders generally live in areas that have strong currents and hard substratum. Conversely, higher diversity infauna are mainly associated with soft unconsolidated sediment and infauna communities are considered widespread and well represented along the continental shelf and upper slopes of the NWMR. In nearshore areas of the NWMR, these species are generally found around reef systems.			
	-	Deeper habitats of Rankin Bank and Glomar Shoal	Deeper habitats of Ningaloo Reef and the protected sponge zone in the south	

Habitat/Community	Browse	NWS / Scarborough	North-west Cape	Reference
Mangroves	Mangroves grow in intertidal mud and sand, with specially adapted aerial roots (pneumatophores) that provide for gas exchange during low tide (McClatchie <i>et al.</i> , 2006). Mangrove forests can help stabilise coastal sediments, provide a nursery ground for many species of fish and crustacean, and provide shelter or nesting areas for seabirds (McClatchie <i>et al.</i> , 2006). Mangroves are confined to shoreline habitats, in nearshore areas of the NWMR.			
	Dampier Peninsula (including Carnot Bay, Beagle Bay and Pender Bay)	Pilbara Coastline (including; Ashburton River Delta, Coolgra Point, Robe River Delta, Yardie Landing, Yammadery Island and the Mangrove Islands) Montebello, Lowendal and Barrow Island Groups Roebuck Bay	Shark Bay Mangrove Bay, Cape Range Peninsula Exmouth Gulf	
Saltmarshes	Saltmarshes communities are confined to shoreline habitats and are typically dominated by dense stands of halophytic plants such as herbs, grasses, and low shrubs. The diversity of saltmarsh plant species increases with increasing latitude (in contrast to mangroves). The vegetation in these environments is essential to the stability of the saltmarsh, as they trap and bind sediments. The sediments are generally sandy silts and clays and can often have high organic material content.			
	-	Eighty Mile Beach Roebuck Bay	Shark Bay	
Sandy Beaches	Sandy beaches are dynamic environments, naturally fluctuating in response to external forcing factors (e.g. waves, currents, etc). Sandy beaches vary in length, width and gradient, and in sediment type, composition, and grain size throughout the NWMR. Sandy beaches are important for both resident and migratory seabirds and shorebirds and can also provide an important habitat for turtle nesting and breeding. They are located along many coastlines of the nearshore environments of the NWMR.			
	Cape Domett Lacrosse Island	Eighty Mile Beach Eco Beach Dampier Archipelago Inshore Pilbara Islands (Northern, Middle, and Southern)	Ningaloo coast Muiron Islands Exmouth Gulf	

Table 4-2 Habitats within the SWMR

Habitat/Community	Location
Offshore	
Soft sediment with infauna	Most of the SWMR seafloor is composed of soft unconsolidated sediments, but due to large variations in bathymetry there are marked differences in sedimentary composition and benthic assemblage structure across the region. Despite the prevalence of these habitats in the SWMR, very little is known about the composition or distribution of the region's sedimentary infauna (DEWHA, 2008b)
Soft sediment with hard substrate outcropping	A unique seafloor feature combining both soft sediment and hard substrates, including outcrops, terraces, continental slope, and escarpments. Perth Canyon Marine Park Ancient coastline at 90-120 m depth contour KEF Diamantina Fracture Zone Naturaliste Plateau
Coral Reef	To date, studies and understanding of the corals within the SWMR have concentrated on the shallow water areas in State Waters. Within the deeper Commonwealth waters of the SWMR little is known of the distribution of corals.
Filter Feeders/ heterotrophic	Filter feeder epifauna such as sponges, ascidians, soft corals and gorgonians are animals that feed by actively filtering suspended matter and food particles from water, by passing the water over specialised filtration structures (DEWR, 2007). Filter feeders generally inhabit deeper habitat (below the photic zone) that have strong currents and hard substratum Ancient coastline at 90-120 m depth Diamantina Fracture Zone Naturaliste Plateau Perth Canyon Marine Park South-west Corner Marine Park
Nearshore	
Coral Reef	The northern extent of the SWMR coincides loosely with the disappearance of abundant and diverse coral from coastal habitats. To the south of Shark Bay, abundant corals occur predominantly around offshore islands, with corals at inshore sites occurring in very isolated patches of non-reef coral communities, usually of reduced species richness. Houtman Abrolhos Islands Rottneest Island
Seagrass and Macroalgae communities	Within the SWMR, macroalgae and seagrass communities are noted for their extent, species richness and endemism. The clear waters of the region allow light to reach greater depths, with some species found at much greater depths than usual (down to 120 m) (DEWR, 2007). Of the known species there are more than 1000 species of macro-algae and 22 species of seagrass consisting of tropical and temperate species. Seagrass and macro-algae occur in areas with sheltered bays and in the inter-reef lagoons along exposed sections of the coast. Houtman Abrolhos Islands Jurien Marine Park Shoalwater Islands Marine Park Geographe Marine Park Cockburn Sound Rottneest Island

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Habitat/Community	Location
	Commonwealth marine environment within and adjacent to the west-coast inshore lagoons KEF Commonwealth marine environment within and adjacent to Geographe Bay KEF Commonwealth marine environment surrounding the Recherche Archipelago KEF
Filter Feeders/ heterotrophic	Filter feeder epifauna such as sponges, ascidians, soft corals and gorgonians are animals that feed by actively filtering suspended matter and food particles from water, by passing the water over specialised filtration structures (DEWR, 2007). Filter feeders generally live in areas that have strong currents and hard substratum. Houtman Abrolhos Islands Recherche Archipelago
Mangroves	Mangroves grow in intertidal mud and sand, with specially adapted aerial roots (pneumatophores) that provide for gas exchange during low tide (McClatchie <i>et al.</i> , 2006). Mangrove forests can help stabilise coastal sediments, provide a nursery ground for many species of fish and crustacean, and provide shelter or nesting areas for seabirds (McClatchie <i>et al.</i> , 2006). Mangroves are confined to shoreline habitats, in nearshore areas of the SWMR. Houtman Abrolhos Islands
Sandy Beaches	Sandy beaches within the SWMR are important for both resident and migratory seabirds and shorebirds and can also host breeding populations of the Australian sea lion. They are found along many coastlines of the nearshore environments of the SWMR. In addition to this, beaches in the SWMR provide a variety of socio-economic values including tourism, commercial and recreational fishing, and support other recreational activities. Houtman Abrolhos Islands Marmion Marine Park Ngari Capes Marine Park Walpole and Nornalup Inlets Marine Park

Table 4-3 Habitats and Biological Communities within the NMR

Habitat/Community	Location		
Offshore habitats and biological communities			
Soft sediment with infauna	Most of the offshore environment of the NMR is characterised by relatively flat expanses of soft sediment seabed. The soft sediments of the region are characterised by moderately abundant and diverse communities of infauna and mobile epifauna dominated by polychaetes, crustaceans, molluscs, and echinoderms.		
Soft sediment with hard substrate outcropping	A unique seafloor feature combining both soft sediment and hard substrates, including outcrops, terraces, continental slope, and escarpments. The variability in substrate composition may contribute to the presence of unique ecosystems. Species present include sponges, soft corals and other sessile filter feeders associated with hard substrate sediments.		
	Carbonate bank and terrace system of the Van Diemen Rise KEF Pinnacles of the Bonaparte Basin KEF		
Coral Reef	Offshore coral reefs within the NMR is generally associated with a series of submerged shoals and banks. The shoals/banks in the region support tropical marine biota consistent with that found on emergent reef systems of the Indo West Pacific region such as Ashmore Reef, Cartier Island, Seringapatam Reef and Scott Reef (Heyward <i>et al.</i> , 1997)		
	Pinnacles of the Bonaparte Basin KEF Evans Shoal Tassie Shoal Blackwood Shoal		
Filter Feeders/ heterotrophic	Filter feeder epifauna such as sponges, ascidians, soft corals and gorgonians are animals that feed by actively filtering suspended matter and food particles from water, by passing the water over specialised filtration structures (DEWHA, 2007b). Filter feeders generally live in areas that have strong currents and hard substratum and typically associated with the deeper habitats of the submerged shoals and banks, and canyon features.		
	Carbonate bank and terrace system of the Van Diemen Rise KEF Pinnacles of the Bonaparte Basin KEF Tributary Canyons of the Arafura Depression KEF Evans Shoal Tassie Shoal Goodrich Bank		
Nearshore			
Coral Reef	Within the NMR corals occur both as reefs and in non-reef coral communities. Nearshore reefs include patch reefs and fringing reefs sparsely distributed within the region. Coral reefs within the NMR provides breeding and aggregation areas for many fish species including mackerel and snapper and offer refuges for sea snakes and apex predators such as sharks.		
	Submerged coral reefs of the Gulf of Carpentaria KEF Darwin Harbour		
Seagrass and Macroalgae communities	Seagrasses provide key habitats in the NMR. They stabilise coastal sediments and trap and recycle nutrients. They provide nursery grounds for commercially harvested fish and prawns and provide feeding grounds for dugongs and green turtles. Seagrass distribution in the region is largely associated with sheltered small bays and inlets including shallow waters surrounding inshore islands.		
	Field Island The mainland coastline adjacent to Kakadu National Park		
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Habitat/Community	Location
Filter Feeders/ heterotrophic	<p>Filter feeder epifauna such as sponges, ascidians, soft corals, and gorgonians are animals that feed by actively filtering suspended matter and food particles from water, by passing the water over specialised filtration structures (DEWHA, 2007b). Filter feeders generally live in areas that have strong currents and hard substratum.</p> <p>Cape Helveticus</p>
Mangroves	<p>Mangroves grow in intertidal mud and sand, with specially adapted aerial roots (pneumatophores) that provide for gas exchange during low tide (McClatchie <i>et al.</i>, 2006). Mangroves provide habitat for waterbirds and support many commercially and recreationally important fish and crustacean species for parts of their life cycles. They buffer the coast from large tidal movements, storm surges and flooding.</p> <p>Tiwi Islands Darwin Harbour The mainland coastline adjacent to the Daly River</p>
Sandy Beaches	<p>Sandy beaches vary in length, width and gradient, and in sediment type, composition, and grain size throughout the NMR and are important for both resident and migratory seabirds and shorebirds. Sandy beaches can also provide an important habitat for turtle nesting. They are located along many coastlines of the nearshore environments of the islands and mainland shores of the NMR.</p> <p>Tiwi Islands Cobourg Peninsula Joseph Bonaparte Gulf</p>

5. FISHES, SHARKS AND RAYS

5.1 Regional Context

Western Australian waters provide important habitat for listed fishes, sharks, and rays including areas that support key life stages such as breeding, foraging, and migration routes for fish species. Pelagic and demersal fishes occupy a range of habitats throughout each of the regions, from coral reefs to open offshore waters, and are an extremely important component of ecosystems, providing a link between primary production and higher predators, with many species being of conservation value and important for commercial and recreational fishing.

The fish fauna in the NWMR is diverse. Of the approximately 500 shark species found worldwide, 94 are found in the region (DEWHA, 2008). Approximately 54 species of syngnathids (seahorses, seadragons, pipehorses and pipefishes) and one species of solenostomids (ghostpipefishes) are also known to occur in the NWMR or adjacent State waters (DSEWPAC, 2012a).

The fish fauna of the SWMR includes more than 900 species occupying a large variety of habitats. However, only three species of bony fishes known to occur in the region are listed under the EPBC Act as threatened or marine species, and seven listed species of shark (DSEWPAC, 2012b).

The NMR is considered an important area for the sawfish and river shark species group, with five species of sawfishes and river sharks listed under the EPBC Act known to occur in the region (DSEWPAC, 2012c). Approximately 28 species of syngnathids and two species of solenostomids are listed marine and known to occur in the NMR, however there is a paucity of knowledge on the distribution, relative abundance and habitats of these species in the region (DEWHA, 2008).

The following sections focus on the fish species (including sharks and rays) listed as threatened or migratory that are known to occur within the NWMR. In addition, listed, conservation dependent fish and shark species for the NWMR are described. A detailed account of commercial and recreational fisheries that operate in the region is provided in **Section 11**.

Table 5-1 outlines the threatened and migratory fish species that may occur within the NWMR, with their conservation status and relevant recovery plans and/or conservation advice. **Table 5-2** provides information for species of fish that are listed as conservation dependent that may occur within the NWMR, NMR and SWMR. Note that currently there are no approved Conservation Advices in place for any of these five species.

Table 5-1 Fish species (including sharks and rays) identified by the EPBC Act PMST for the NWMR

Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999			WA Biodiversity Conservation Act 2016	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	
<i>Rhincodon typus</i>	Whale shark	Vulnerable	Migratory	Marine	Other specially protected fauna	Conservation Advice <i>Rhincodon typus</i> whale shark. (Threatened Species Scientific Committee, 2015d)
<i>Carcharias taurus</i>	Grey nurse shark (west coast population)	Vulnerable	N/A	Marine	Vulnerable	Recovery Plan for the Grey Nurse Shark (<i>Carcharias taurus</i>) (DOE, 2014a)
<i>Carcharodon carcharias</i>	White shark	Vulnerable	Migratory	Marine	Vulnerable	Recovery Plan for the White Shark (<i>Carcharodon carcharias</i>) (DSEWPAC, 2013b)
<i>Isurus oxyrinchus</i>	Shortfin mako	N/A	Migratory	Marine	N/A	N/A
<i>Isurus paucus</i>	Longfin mako	N/A	Migratory	Marine	N/A	N/A
<i>Lamna nasus</i>	Porbeagle shark Mackerel shark	N/A	Migratory	Marine	N/A	N/A
<i>Carcharhinus longimanus</i>	Oceanic whitetip shark	N/A	Migratory	Marine	N/A	N/A
<i>Anoxypristis cuspidata</i>	Narrow sawfish	N/A	Migratory	Marine	N/A	N/A
<i>Pristis clavata</i>	Dwarf sawfish	Vulnerable	Migratory	Marine	Priority	Sawfish and River Sharks Multispecies Recovery Plan (Commonwealth of Australia, 2015b)
<i>Pristis pristis</i>	Largetooth (Freshwater) sawfish	Vulnerable	Migratory	Marine	Priority	
<i>Pristis zijsron</i>	Green sawfish	Vulnerable	Migratory	Marine	Vulnerable	
<i>Glyphis garricki</i>	Northern river shark	Endangered	N/A	Marine	Priority	
<i>Manta alfredi</i>	Reef manta ray	N/A	Migratory	Marine	N/A	N/A
<i>Manta birostris</i>	Giant manta ray	N/A	Migratory	Marine	N/A	N/A

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Table 5-2 EPBC Act listed Conservation Dependent species of fishes and sharks that may occur in the NWMR, NMR and SWMR

Species Name	Common Name	Likely Occurrence / Distribution	Listing Advice
<i>Hoplostethus atlanticus</i>	Orange roughy, Deep-sea perch, Red roughy	SWMR	No conservation listing advice for this species. Refer to the Marine bioregional plan for the SWMR (DSEWPAC, 2012b) for further information
<i>Thunnus maccoyii</i>	Southern bluefin tuna	NWMR and SWMR	Threatened Species Scientific Committee (2010)
<i>Sphyrna lewini</i>	Scalloped hammerhead	NWMR, NMR and SWMR	Threatened Species Scientific Committee (2018)
<i>Centrophorus zeehaani</i>	Southern dogfish, Endeavour dogfish, Little gulper shark	SWMR	Threatened Species Scientific Committee (2013)
<i>Galeorhinus galeus</i>	School shark, Eastern school shark, Snapper shark, Tope, Soupfin shark	SWMR	Threatened Species Scientific Committee (2009)

5.2 Protected Sharks, Sawfishes and Rays in the NWMR

The EPBC Act Protected Matters search (**Appendix A**) identified seven species of shark and five species of river shark or sawfish listed as threatened and/or migratory within the NWMR. In addition, two species of ray (the reef manta ray and giant manta ray) are listed as migratory within the region (refer **Table 5-2**).

5.2.1 Sharks and Sawfishes

The shark species known to occur within the NWMR include: the whale shark, grey nurse shark, white shark, shortfin mako, and longfin mako (**Table 5-2**).

Five species of river shark or sawfish known to occur in the NWMR and include: the narrow sawfish, northern river shark, freshwater sawfish, green sawfish and dwarf sawfish (**Table 5-2**).

There are identified BIAs within the NWMR for the whale shark, freshwater sawfish, green sawfish, and dwarf sawfish (refer **Section 5.3.2**).

Table 5-2 Information on the threatened shark and sawfish species within the NWMR

Species	Preferred Habitat and Diet	Habitat Location
Whale shark	Preferred habitat: They have a widespread distribution in tropical and warm temperate seas, both oceanic and coastal (Last and Stevens, 2009). The species is widely distributed in Australian waters. Diet: Whale sharks are planktivorous sharks and feed on a variety of planktonic organisms including krill, jellyfish, and crab larvae (Last and Stevens, 2009).	Ningaloo Reef is the main known aggregation site for whale sharks in Australian waters and has the largest density of whale sharks per kilometre in the world (Martin, 2007). Refer Table 5-3 for the BIA summary for the whale shark.
Grey nurse shark (west coast population)	Preferred habitat: Most commonly found in temperate waters on, or close to, the bottom of the continental shelf, from close inshore to depths of about 200 m (McAuley, 2004). Diet: A variety of teleost and elasmobranch fishes and some cephalopods (Gelsleichter <i>et al.</i> , 1999; Smale, 2005).	Details of movement patterns of the western sub-population are unclear (McAuley, 2004) and key aggregation sites have not been formally identified within the NWMR (Chidlow <i>et al.</i> , 2006). The NWMR represents the northern limit of the west coast population.

Species	Preferred Habitat and Diet	Habitat Location
White shark	<p>Preferred habitat: The species typically occurs in temperate coastal waters between the shore and the 100 m depth contour; however, adults and juveniles have been recorded diving to depths of 1000 m (Bruce <i>et al.</i>, 2006; Bruce, 2008).</p> <p>Diet: Smaller white sharks (less than 3 m in length) feed primarily on teleost and elasmobranch fishes, broadening their diet as larger sharks to include marine mammals (Last and Stevens, 2009).</p>	<p>There are no known aggregation sites for white sharks in the NWMR, and this species is most often found south of North-west Cape, in low densities (DSEWPAC, 2012a).</p> <p>Given the migratory nature of the species, most likely has a broad distribution within the NWMR. No BIAs identified for NWMR.</p>
Shortfin mako	<p>Preferred habitat: The shortfin mako shark is a pelagic species with a circumglobal, wide-ranging oceanic distribution in tropical and temperate seas (Mollet <i>et al.</i>, 2000). Tagging studies indicate shortfin makos spend most of their time in water less than 50 m deep but with occasional dives up to 880 m (Abascal <i>et al.</i>, 2011; Stevens <i>et al.</i>, 2010).</p> <p>Diet: Feeds on a variety of prey, such as teleost fishes, other sharks, marine mammals, and marine turtles (Campana <i>et al.</i>, 2005).</p>	<p>Given the migratory nature of the species, most likely has a broad distribution within the NWMR. No BIAs identified for NWMR.</p>
Longfin mako	<p>Preferred habitat: A pelagic species with a wide-ranging oceanic distribution in tropical and temperate seas (Mollet <i>et al.</i>, 2000).</p> <p>Diet: Primarily teleost fishes and cephalopods (primarily squid) (Last and Stevens, 2009).</p>	<p>Records on longfin mako sharks are sporadic and their complete geographic range is not well known (Reardon <i>et al.</i>, 2006).</p> <p>Given the migratory nature of the species, most likely has a broad distribution within the NWMR. No BIAs identified for NWMR.</p>
Mackerel/Porbeagle shark	<p>Preferred habitat: The porbeagle shark primarily inhabits offshore waters around the edge of the continental shelf. They occasionally move into coastal waters, but these movements are temporary (Campana and Joyce, 2004; Francis <i>et al.</i>, 2002). The porbeagle shark is known to dive to depths exceeding 1300 m (Campana <i>et al.</i>, 2010; Saunders <i>et al.</i>, 2011).</p> <p>Diet: Primarily teleost fish, elasmobranchs, and cephalopods (primarily squid) (Joyce <i>et al.</i>, 2002; Last and Stevens, 2009).</p>	<p>In Australia, the species occurs in waters from southern Queensland to south-west Australia (Last and Stevens, 2009). Distribution within the NWMR is unknown, but there are several records for this species on the NWS in the Atlas of Living Australia (ALA).</p>
Oceanic whitetip shark	<p>Preferred habitat: The oceanic whitetip shark is globally distributed in warm-temperate and tropical oceans (Andrzejczek <i>et al.</i>, 2018). The species may occur in tropical and sub-tropical offshore and coastal waters around Australia. They primarily occupy pelagic waters in the upper 200 m of the water column; however, they have been observed diving to depths of around 1000 m, potentially associated with foraging behaviour (Howey-Jordan <i>et al.</i>, 2013; D'Alberto <i>et al.</i>, 2017). The species is highly migratory, travelling large distances between shallow reef habitats in coastal waters and oceanic waters (Howey-Jordan <i>et al.</i>, 2013). The species does exhibit a strong preference for warm and shallow waters above 120 m.</p> <p>Diet: Opportunistic feeders and generally target a variety of finfishes and pelagic squid, depending on habitat. Target pelagics such as tuna in open ocean as noted by the large bycatch numbers in the long line fisheries.</p>	<p>Given the migratory nature of the species, most likely has a broad distribution within the NWMR. No BIAs identified for NWMR.</p>

Species	Preferred Habitat and Diet	Habitat Location
Narrow sawfish	Preferred habitat ¹ : Shallow coastal, estuarine, and riverine habitats, however it may occur in waters up to 40 m deep (D'Anastasi <i>et al.</i> , 2013). Diet: Shoaling fishes, such as mullet, as well as molluscs and small crustaceans (Cliff and Wilson, 1994).	Shallow coastal waters of the Pilbara and Kimberly coasts (Last and Stevens, 2009).
Northern river shark	Preferred habitat ¹ : Rivers, tidal sections of large tropical estuarine systems and macrotidal embayments, as well as inshore and offshore marine habitats (Pillans <i>et al.</i> , 2009; Thorburn and Morgan, 2004). Adults have been recorded only in marine environments. Juveniles and sub-adults have been recorded in freshwater, estuarine and marine environments (Pillans <i>et al.</i> , 2009). Diet: Variety of fish and crustaceans (Stevens <i>et al.</i> , 2005)	Within the NWMR records have come from both the west and east Kimberley, including King Sound, the Ord and King rivers, West Arm of Cambridge Gulf and also from Joseph Bonaparte Gulf (Thorburn and Morgan, 2004; Stevens <i>et al.</i> , 2005; Thorburn, 2006; Field <i>et al.</i> , 2008; Pillans <i>et al.</i> , 2008, Whitty <i>et al.</i> , 2008; Wynen <i>et al.</i> , 2008).
Large-tooth (Freshwater) sawfish	Preferred habitat: Sandy or muddy bottoms of shallow coastal waters, estuaries, river mouths and freshwater rivers, and isolated water holes. Diet: Shoaling fishes, such as mullet, as well as molluscs and small crustaceans (Cliff and Wilson, 1994).	Refer Table 5-3 for the BIA summary for the freshwater sawfish.
Green sawfish	Preferred habitat ¹ : Inshore coastal environments including estuaries, river mouths, embayments, and along sandy and muddy beaches, as well as offshore marine habitat (Stevens <i>et al.</i> , 2005; Thorburn <i>et al.</i> , 2003). Diet: Schools of baitfish and prawns (Pogonoski <i>et al.</i> , 2002), molluscs and small crustaceans (Cliff and Wilson, 1994).	Refer Table 5-3 for the BIA summary for the green sawfish.
Dwarf sawfish	Preferred habitat ¹ : Shallow (2 to 3 m) silty coastal waters and estuarine habitats, occupying relatively restricted areas and moving only small distances (Stevens <i>et al.</i> , 2008) Diet: Shoaling fish such as mullet, molluscs, and small crustaceans (Cliff and Wilson, 1994).	Refer Table 5-3 for the BIA summary for the dwarf sawfish.

¹ Preferred habitat as described within the *Sawfish and River Sharks Multispecies Recovery Plan* (Commonwealth of Australia, 2015b).

5.2.2 Rays

Rays are commonly found in the NWMR. Two listed and migratory species of ray known to occur within the NWMR: the reef manta ray and giant manta ray.

No BIAs for either the reef or giant manta ray species have been identified in the NWMR.

Table 5-3 Information on migratory ray species within the NWMR

Species	Preferred Habitat and Diet	Habitat Location
Reef manta ray	Preferred habitat: The reef manta ray is commonly sighted within productive nearshore environments, such as island groups, atolls or continental coastlines. However, the species has also been recorded at offshore coral reefs, rocky reefs, and seamounts (Marshall <i>et al.</i> , 2009). Diet: Feed on planktonic organisms including krill and crab larvae.	A resident population of reef manta rays has been recorded at Ningaloo Reef. No BIAs identified for NWMR.
Giant manta ray	Preferred habitat: The species primarily inhabits near-shore environments along productive coastlines with regular upwelling, but they appear	The Ningaloo Coast is an important area for giant manta rays from March to August (Preen <i>et al.</i> , 1997).

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Species	Preferred Habitat and Diet	Habitat Location
	to be seasonal visitors to coastal or offshore sites including offshore island groups, offshore pinnacles and seamounts (Marshall <i>et al.</i> , 2011). Diet: Feed on planktonic organisms including krill and crab larvae.	No BIAs identified for NWMR.

5.3 Fish, Shark and Sawfish Biological Important Areas in the NWMR

A review of the National Conservation Values Atlas identified Biologically Important Areas (BIAs) for four species of shark and sawfish (whale shark, freshwater sawfish, green sawfish and dwarf sawfish) within the NWMR. The BIAs for the whale shark and the sawfish species include foraging, nursing and pupping areas. These are described in **Table 5-4**.

Table 5-4 Fish, whale shark and sawfish BIAs within the NWMR

Species	Woodside Activity Area			BIAs		
	Browse	NWS/S	NWC	Pupping	Nursing	Foraging
Whale shark	✓	✓	✓	No pupping BIA identified within the NWMR	No nursing BIA identified within the NWMR	Foraging (high density) in Ningaloo Marine Park and adjacent Commonwealth waters (March–July) Foraging northward from Ningaloo along the 200 m isobath (July – Nov).
Green sawfish	✓	✓	-	Pupping in Cape Keraudren (pupping occurs in summer in a narrow area adjacent to shoreline) Pupping in Willie Creek Pupping in Roebuck Bay Pupping in Cape Leveque Pupping in waters adjacent to Eighty Mile Beach Pupping (likely) in Camden Sound.	Nursing in Cape Keraudren Nursing in waters adjacent to Eighty Mile Beach	Foraging in Cape Keraudren Foraging in Roebuck Bay Foraging in Cape Leveque Foraging in Camden Sound
Largetooth (freshwater) sawfish	✓	✓	-	Pupping in the mouth of the Fitzroy River (January to May) Roebuck Bay (Jan – May) Pupping likely in waters adjacent to Eighty Mile Beach	Nursing (likely) in King Sound Roebuck Bay (Jan – May)	Foraging in the mouth of the Fitzroy River (January to May) Foraging in King Sound Roebuck Bay (Jan – May) Foraging in waters adjacent to Eighty Mile Beach
Dwarf sawfish	✓	✓	-	Pupping in King Sound Pupping in waters adjacent to Eighty Mile Beach	Nursing in King Sound Nursing waters adjacent to Eighty Mile Beach	Foraging in King Sound Foraging in Camden Sound Foraging in waters adjacent to Eighty Mile Beach

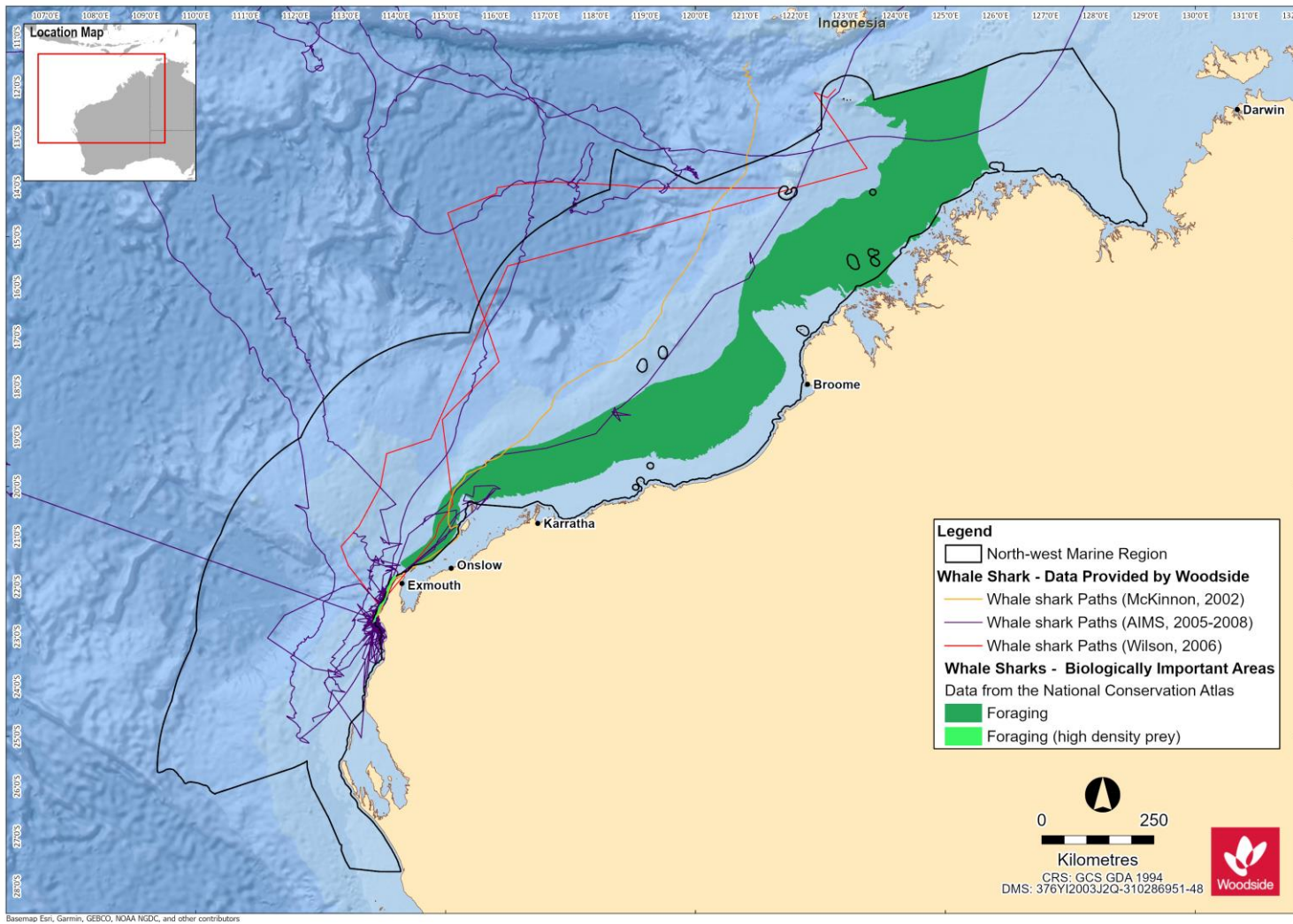


Figure 5-1 Whale shark BIAs for the NWMR and tagged whale shark tracks

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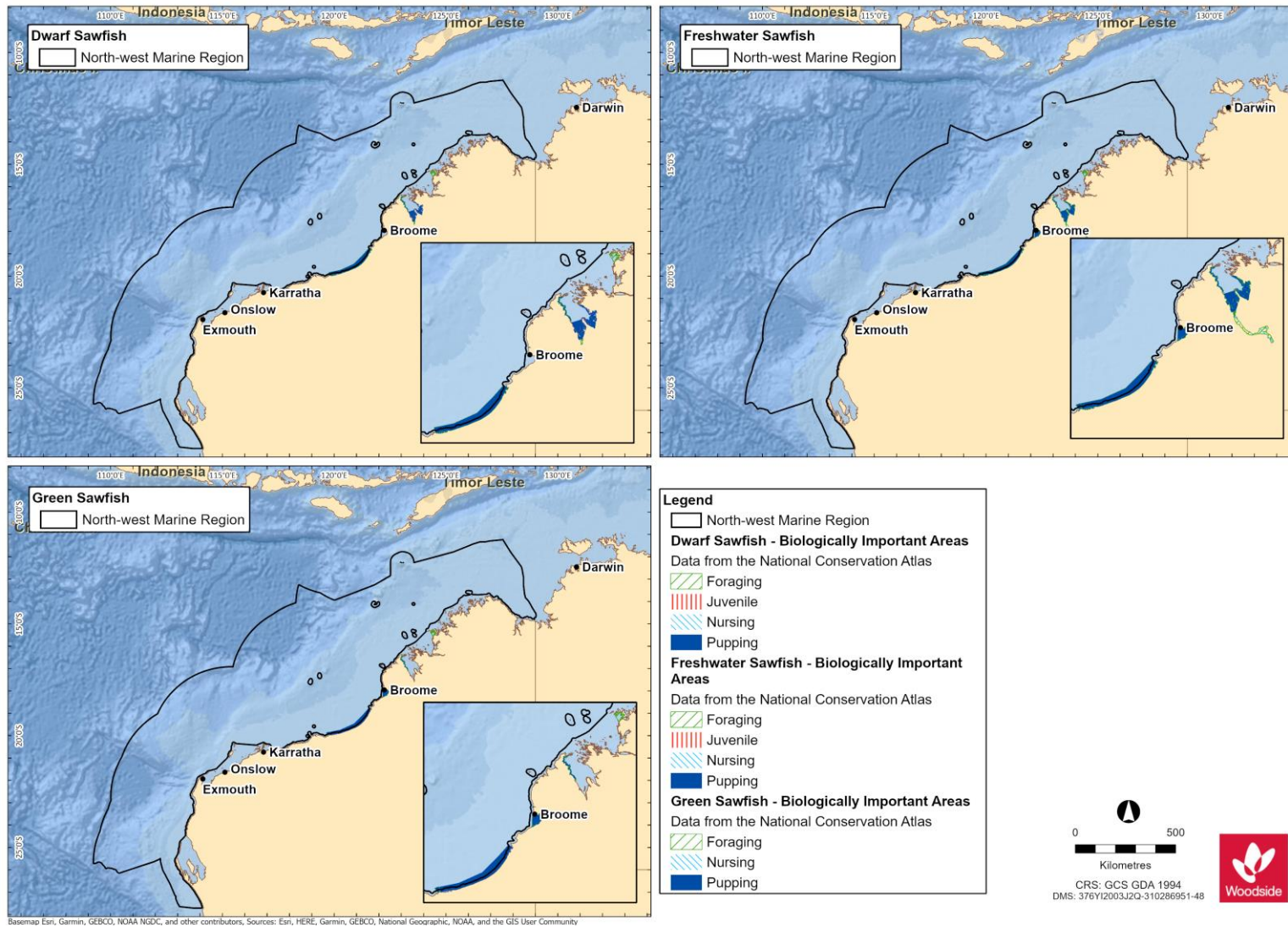


Figure 5-2 Sawfish BIAs for the NWMR

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5.4 Fish Assemblages of the NWMR

5.4.1 Regional Context for Fish Assemblages of NWMR

The NWMR contains a diverse range of fishes of tropical Indo-west Pacific affinity (Allen *et al.*, 1988). The region is characterised by the highest level of endemism and species diversity compared with other areas of the Australian continental slope. Last *et al.* (2005) recorded 1431 species from the three bioregions encompassing the continental slope, whilst also acknowledging some information gaps.

The NWMR is known for its demersal slope fish assemblages; the continental slope of the Timor Province and the North-west Transition supports more than 418 and 505 species of demersal fishes respectively, of which 64 are considered to be endemic. This is the second richest area for demersal fish species across the entire Australian continental slope. Conversely, the broad Southern Province, which covers most of southern Australia, supports 463 species, only 26 possibly being endemic. The continental slope demersal fish assemblages of the NWMR have been identified as a KEF (DEWHA, 2008), as described in **Section 9**.

The NWMR also features a diversity of pelagic fishes (those living in the pelagic zone) and benthopelagic fishes, including tuna, billfish, bramids, lutjanids, serranids and some sharks (DEWHA, 2007a). These species feed on salps and jellyfish, and more often on secondary consumers such as squid and bait fish. Water depth provides an indication of the level of interaction between pelagic and benthic communities within the NWMR; in waters deeper than 1000 m, for instance, the trophic system is pelagically-driven and benthic communities rely on particulates that fall to the seafloor (DEWHA, 2007a).

Pelagic fishes play an important ecological role within the NWMR; small pelagic fishes, such as lantern fish, inhabit a range of marine environments, including inshore and continental shelf waters and form a vital link in and between many of the region's trophic systems, feeding on pelagic phytoplankton and zooplankton and providing a food source for a wide variety of predators including large pelagic fishes, sharks, seabirds and marine mammals (Bulman, 2006; Mackie *et al.*, 2007). Large pelagic fishes, such as tuna, mackerel, swordfish, sailfish and marlin, are found mainly in oceanic waters and occasionally on the continental shelf (Brewer *et al.*, 2007). Both juvenile and adult phases of the large pelagic species are highly mobile and have a wide geographic distribution, although the juveniles more frequently inhabit warmer or coastal waters (DEWHA, 2008).

5.4.2 Listed Fish Species in the NWMR

The family Syngnathidae is a group of bony fishes that includes seahorses, pipefishes, pipehorses and seadragons. Along with syngnathids, members of the related Solenostomidae family (ghost pipefishes) are also found in the NWMR (DSEWPAC, 2012a).

There are 44 solenostomid and syngnathid species that are listed marine species that may occur within the NWMR, although no species is currently listed as threatened or migratory, according to the PMST report (**Appendix A**).

Syngnathids live in nearshore and inner shelf habitats, usually in shallow coastal waters, among seagrasses, mangroves, coral reefs, macroalgae dominated reefs, and sand or rubble habitats (Dawson, 1985; Lourie *et al.*, 1999, Lourie *et al.*, 2004; Vincent, 1996). Two species, the winged seahorse (*Hippocampus alatus*) and western pipehorse (*Solegnathus sp. 2*) have been identified in deeper waters of the NWMR (up to 200 m) (DSEWPAC, 2012a), however, these species were not identified by the Protected Matters search of the NWMR.

Knowledge about the distribution, abundance and ecology of both syngnathids and solenostomids in the NWMR is limited. No BIAs for syngnathids and solenostomids have been identified in the NWMR.

5.4.3 Browse

The proposed Browse activity area includes biologically important habitat for the whale shark and three sawfish species:

- whale shark (foraging northward from Ningaloo along the 200 m isobath (July – Nov),
- freshwater sawfish (pupping, nursing and foraging areas),
- green sawfish (pupping, nursing and foraging areas); and
- dwarf sawfish (pupping, nursing and foraging areas).

BIAs for the shark and sawfish species are outlined in **Table 5-4** and **Figure 5-1**.

The proposed Browse activity area has partial overlap with the Continental slope demersal fish communities KEF.

5.4.4 NWS / Scarborough

The NWS / Scarborough activity area includes biologically important habitat for the whale shark and three sawfish species:

- whale shark (foraging northward from Ningaloo along the 200 m isobath (July – Nov),
- freshwater sawfish (pupping, nursing and foraging areas),
- green sawfish (pupping, nursing and foraging areas); and
- dwarf sawfish (pupping, nursing and foraging areas).

BIAs for the whale shark and sawfish species are outlined in **Table 5-4** and **Figure 5-1**.

The NWS / Scarborough activity area has partial overlap with the Continental slope demersal fish communities KEF. The continental slope between North-west Cape and the Montebello Trough has more than 500 fish species, 76 of which are endemic, which makes it the most diverse slope bioregion in Australia (Last *et al.*, 2005).

5.4.5 North-west Cape

The North-west Cape activity area includes biologically important foraging habitat for the whale shark:

- whale shark, including:
 - Foraging (high density) in Ningaloo Marine Park and adjacent Commonwealth waters (March–July); and
 - Foraging northward from Ningaloo along the 200 m isobath (July – Nov).

BIAs for the whale shark are outlined in **Table 5-4** and **Figure 5-1**.

The North-west Cape activity area coincides with part of the Continental slope demersal fish communities KEF.

6. MARINE REPTILES

6.1 Regional Context for Marine Reptiles

The NWMR contains important habitat for listed marine reptiles, including areas that support key life stages such as nesting, internesting, migration and foraging for marine turtle species, and habitats supporting resident sea snake and crocodile populations.

Six of the seven marine turtle species occur in Australian waters, and all six (the green turtle, hawksbill turtle, loggerhead turtle, flatback turtle, leatherback turtle and olive ridley turtle) occur in the NWMR and NMR.

There are 25 listed species of sea snake reported within or adjacent to the NWMR (Guinea, 2007a; Udyawer *et al.*, 2016), of which four are endemic to reef habitats in the remote parts of the region. Nineteen (19) listed sea snake species are known to occur in the NMR, as reported in the Protected Matters search (**Appendix A**).

There are significantly fewer marine reptile species that frequently occur within the SWMR and presently include three species of listed marine turtle and one sea snake species. Other species of sea snake may occur because of the southward-flowing Leeuwin Current, as vagrants in the region (DSEWPAC, 2012b).

The following sections focus on the listed marine reptile species known to occur within the NWMR.

Table 6-1 outlines the threatened and migratory marine reptile species that occur within the NWMR, with their conservation status and relevant recovery plans and/or conservation advice.

Table 6-1 Marine reptile species identified by the EPBC Act PMST as potentially occurring within or utilising habitats in the NWMR for key life cycle stages

Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999			WA Biodiversity Conservation Act 2016	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	
<i>Caretta caretta</i>	Loggerhead turtle	Endangered	Migratory	Marine	Endangered	Recovery Plan for Marine Turtles in Australia 2017-2027 (Commonwealth of Australia, 2017)
<i>Chelonia mydas</i>	Green turtle	Vulnerable	Migratory	Marine	Vulnerable	
<i>Dermochelys coriacea</i>	Leatherback turtle	Endangered	Migratory	Marine	Vulnerable	
<i>Eretmochelys imbricata</i>	Hawksbill turtle	Vulnerable	Migratory	Marine	Vulnerable	
<i>Natator depressus</i>	Flatback turtle	Vulnerable	Migratory	Marine	Vulnerable	
<i>Lepidochelys olivacea</i>	Olive ridley turtle	Endangered	Migratory	Marine	Vulnerable	
<i>Aipysurus apraefrontalis</i>	Short-nosed sea snake	Critically endangered	N/A	Marine	Critically endangered	Approved Conservation Advice for <i>Aipysurus apraefrontalis</i> (Short-nosed Sea Snake) (DSEWPAC, 2011a)
<i>Aipysurus foliosquama</i>	Leaf-scaled sea snake	Critically endangered	N/A	Marine	Critically endangered	Approved Conservation Advice for <i>Aipysurus foliosquama</i> (Leaf-scaled Sea Snake) (DSEWPAC, 2011b)
<i>Crocodylus porosus</i>	Salt-water crocodile	N/A	Migratory	Marine	Other protected fauna	N/A

6.2 Marine Turtles in the NWMR

According to the Protected Matters search (**Appendix A**) six species of marine turtle known to occur within the NWMR are listed as threatened and migratory (three Vulnerable and three Endangered) under the EPBC Act—the green (*Chelonia mydas*), hawksbill (*Eretmochelys imbricata*), flatback (*Natator depressus*), loggerhead (*Caretta caretta*), leatherback (*Dermochelys coriacea*) and olive ridley (*Lepidochelys olivacea*) turtle (DSEWPAC, 2012a) (refer **Table 6-1**).

The NWMR supports globally significant breeding populations of four marine turtle species: the green, hawksbill, flatback and loggerhead turtle. Olive ridley turtles are known to forage within the NWMR, but there are only occasional records of the species nesting in the region. Leatherback turtles regularly forage over Australian continental shelf waters within the NWMR but there are also no records of the species nesting in the region (DSEWPAC, 2012a).

The six marine turtle species reported for the NWMR also occur within the NMR.

Three marine turtle species; the green, loggerhead, and leatherback turtle, have presumed feeding areas within the SWMR; however, no known nesting areas exist within the region (DSEWPAC, 2012b).

Discrete genetic stocks have evolved within each marine turtle species. This is the result of marine turtles returning to the location where they hatched. These genetically distinct stocks are defined by the presence of regional breeding aggregations. Stocks are composed of multiple rookeries in a region and are delineated by where there is little or no migration of individuals between nesting areas. Turtles from different stocks typically overlap at feeding grounds (Commonwealth of Australia, 2017). There are 17 genetic stocks across both the NWMR and NMR (nine in the NWMR, six in the NMR, and two overlapping both regions). Of these 17 genetic stocks, nine are known to occur within Woodside's three areas of activity (**Table 6-2**).

6.2.1 Life Cycle Stages

Marine turtles are highly migratory during non-reproductive life phases and have high site fidelity during breeding and nesting life phases. Majority of their lives are spent in the ocean, but the adult female marine turtles will come ashore to lay eggs in the sand above the high water mark on natal beaches (Commonwealth of Australia, 2017). **Figure 6-1** summarises the generalised life cycle of marine turtles. Species-specific life cycle information is outlined within the Recovery Plan for Marine Turtles of Australia (Commonwealth of Australia, 2017).

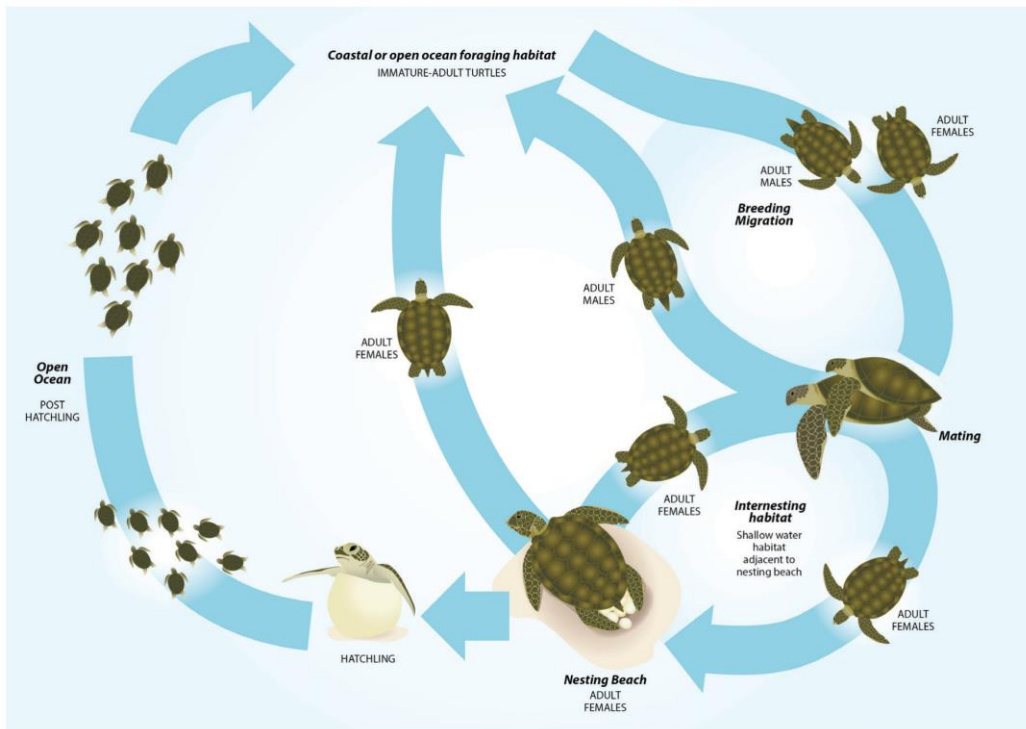


Figure 6-1 Generalised life cycle of marine turtles (Commonwealth of Australia, 2017)

6.2.2 Habitat Critical to Survival for Marine Turtles in the NWMR

The Recovery Plan for Marine Turtles of Australia (Commonwealth of Australia, 2017) identifies habitat critical to the survival of a species for marine turtle stocks under the EPBC Act. Habitat critical to survival is defined by the EPBC Act *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance* as areas necessary:

- for activities such as foraging, breeding or dispersal;
- for the long-term maintenance of the species (including the maintenance of species essential to the survival of the species);
- to maintain genetic diversity and long term evolutionary development; and
- for the reintroduction of populations or recovery of the species.

The Recovery Plan for Marine Turtles of Australia (Commonwealth of Australia, 2017) has identified nesting locations and associated internesting areas as habitat critical to survival for four marine turtle species within the NWMR and these are identified, described and mapped in **Table 6-2** and **Figure 6-2**. No habitat critical to survival has been identified within the NWMR for olive ridley or leatherback turtles.

Table 6-2 outlines the relevant genetic stock, habitat critical to survival and key life cycle stage seasonality of the four species of marine turtles within the NWMR.

Table 6-2 Genetic stock, habitat critical to survival and key life cycle stage seasonality of the four species of marine turtles within the NWMR

Species	Woodside Activity Area			Habitat Critical to Survival			
	Browse	NWS/S	NWC	Nesting (* Major Rookery ¹)	Internesting Buffer	Seasonality-Nesting	Preferred Habitat ²
Green Turtle							
NWS Stock (G-NWS)	✓	✓	✓	Adele Island Maret Island Cassini Island Lacepede Islands* Barrow Island* Montebello Islands (all with sandy beaches)* Serrurier Island Dampier Archipelago Thevenard Island Northwest Cape* Ningaloo coast	20 km radius	Nov-Mar	Nearshore reef habitats in the photic zone.
Ashmore Reef Stock (G-AR)	✓	-	-	Ashmore Reef* Cartier Reef*		All year (peak: Dec-Jan)	
Scott Reef-Browse Island Stock (G-ScBr)	✓	-	-	Scott Reef (Sandy Islet)* Browse Island*		Nov-Mar	
Hawksbill Turtle							
Western Australia Stock (H-WA)	-	✓	-	Dampier Archipelago (including Rosemary Island and Delambre Island)* Montebello Islands (including Ah Chong Island, South East Island and Trimouille Island)* Lowendal Islands (including Varanus Island, Beacon Island and Bridled Island) Sholl Island	20 km radius	Oct-Feb	Nearshore and offshore reef habitats.

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Species	Woodside Activity Area			Habitat Critical to Survival			
	Browse	NWS/S	NWC	Nesting (* Major Rookery ¹)	Internesting Buffer	Seasonality-Nesting	Preferred Habitat ²
Flatback Turtle							
Cape Domett Stock (F-CD)	✓	-	-	Cape Domett* Lacrosse Island	60 km radius	All year (peak: Jul-Sep)	Nearshore and offshore sub-tidal and soft bottomed habitats of offshore islands.
South-west Kimberley Stock (F-swKim)	-	✓	-	Eighty Mile Beach* Eco Beach* Lacepede Islands		Oct-Mar	
Pilbara Stock (F-Pil)	-	✓	-	Montebello Islands Mundabullangana Beach* Barrow Island* Cemetery Beach Dampier Archipelago (including Delambre Island* and Huay Island) Coastal islands from Cape Preston to Locker Island		Oct-Mar	
Unknown genetic stock Kimberley, Western Australia	✓	✓	-	Maret Islands Montilivet Islands Cassini Island Coronation Islands (includes Lamarck Island) Napier-Broome Bay Islands (West Governor Island, Sir Graham Moore Island – near Kalumbaru) Champagny, Darcy and Augustus Islands (Camden Sound)		May-July	

Species	Woodside Activity Area			Habitat Critical to Survival			
	Browse	NWS/S	NWC	Nesting (* Major Rookery ¹)	Interesting Buffer	Seasonality-Nesting	Preferred Habitat ²
Loggerhead Turtle							
Western Australia Stock (LH-WA)	-	-	✓	Dirk Hartog Island* Muiron Islands* Gnaraloo Bay* Ningaloo coast	20 km radius	Nov-May	Nearshore and island coral reefs, bays and estuaries in tropical and warm temperate latitudes.

¹ Major rookeries as outlined in the Recovery Plan (Commonwealth of Australia, 2017)

² Preferred habitat as outlined in the Recovery Plan (Commonwealth of Australia, 2017)

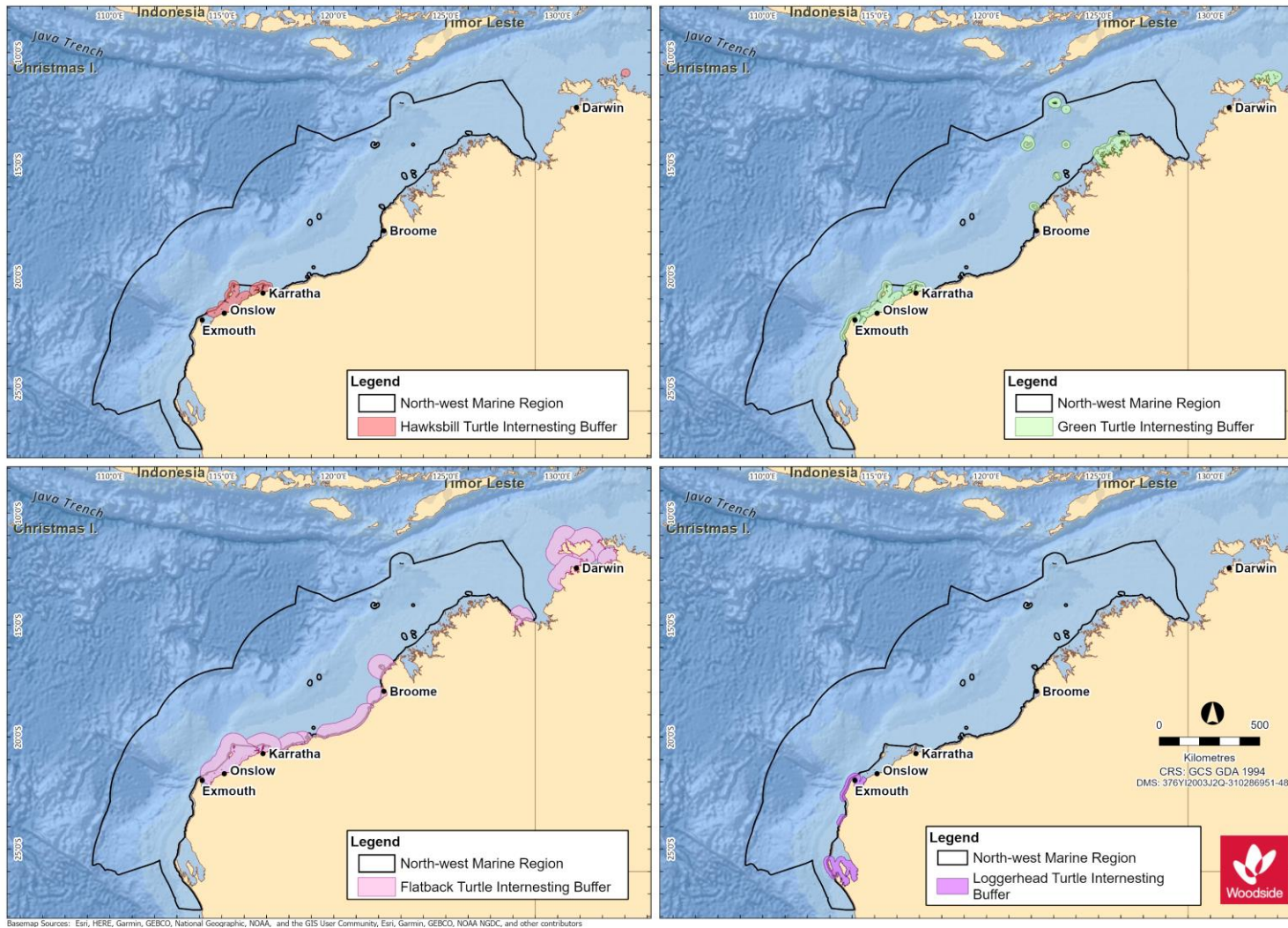


Figure 6-2 Marine turtle species habitat critical to survival (nesting beaches and interning buffers) for the NWMR

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6.3 Marine Turtle Biological Important Areas in the NWMR

A review of the National Conservation Values Atlas (DAWE, 2020²) identified BIAs for the four marine turtle species that occur within the NWMR. These are described in **Table 6-3**. Note that nesting and interesting BIAs are not listed in **Table 6-3** as they are defined as in the Recovery Plan as habitat critical to survival for marine turtles nesting beaches and interesting areas (refer **Table 6-2**).

² <http://www.environment.gov.au/webgis-framework/apps/ncva/ncva.jsf>

Table 6-3 Marine turtle BIAs within the NWMR

Species	Woodside Activity Area			BIAs		
	Browse	NWS/S	NWC	Mating	Foraging	Migration ³
Green turtle	✓	✓	✓	No mating BIA identified within the NWMR.	Foraging inshore areas of Barrow Island Foraging at Montgomery Reef Foraging at Montebello Islands Foraging at Dixon Island Foraging around Ashmore Reef Foraging at Seringapatam Reef and Scott Reef Foraging in the De Grey River area to Bedout Island Foraging around the Islands between Cape Preston and Onslow and inshore of Barrow Island Foraging around Dampier Archipelago (islands to the west of the Burrup Peninsula) Foraging at Legendre Island and Huay Island Foraging around Delambre Island Foraging in the Joseph Bonaparte Gulf Foraging in waters adjacent to James Price Point	Green turtles can migrate more than 2600 km between their feeding and nesting grounds. Individual turtles foraging in the same area do not necessarily take the same migration route (Limpus <i>et al.</i> , 1992). Ferreira <i>et al.</i> (2021) broadly identified two migratory corridors, one used by the NWS stock-Pilbara and another used by the NWS stock-Kimberley and the Scott-Browse stock with some overlap at the northern and southern extents respectively. This study showed that the foraging distribution of green turtles from two stocks in WA expands throughout north-west and northern Australian coastal waters, including the NT and Queensland.
Hawksbill turtle	✓	✓	✓	No mating BIA identified within the NWMR.	Foraging around the Lowendal Island group Foraging at Delambre Island Foraging around Dixon Island Foraging in the De Grey River area to Bedout Island Foraging around the islands between Cape Preston and	Individuals may migrate up to 2400 km between their nesting and foraging grounds (DSEWPAC, 2012a).

³ Migration BIA does not exist for Marine Turtles – general information provided.

Species	Woodside Activity Area			BIAs		
	Browse	NWS/S	NWC	Mating	Foraging	Migration ³
					Onslow and inshore of Barrow Island Foraging around the islands of the Dampier Archipelago (to the west of the Burrup Peninsula) Foraging at Ashmore Reef	
Flatback turtle	✓	✓	-	Lacepede Islands Mating at Montebello Islands Mating at Dampier Archipelago (islands to the west of the Burrup Peninsula) Mating at Barrow Island A year-round internesting buffer biologically important area (BIA) of 80 km is located north and north-west of the Montebello Islands, extending 20 km further than the habitat critical to survival. However, use level for this BIA has been defined as very low (Commonwealth of Australia, 2017) and the habitat critical to survival internesting buffer is the legally recognised area of protection under the EPBC Act <i>Significant Impact Guidelines 1.1 – Matters of National Environmental Significance</i> Refer to the Marine Bioregional Plan for the North-west Marine Region (DSEWPAC, 2012a) for locations of seasonal 80 km internesting buffer BIAs for flatback turtles	Foraging at the islands between Cape Preston and Onslow and inshore of Barrow Island. Foraging at Montebello Islands Foraging at Dampier Archipelago (islands to the west of the Burrup Peninsula) Foraging at Legendre Island and Huay Island Foraging at Delambre Island Foraging in the Joseph Bonaparte Depression Foraging in waters adjacent to James Price Point	There is evidence that some flatback turtles undertake long-distance migrations between breeding and feeding grounds (Limpus <i>et al.</i> , 1983). However, flatback turtles generally do not have a pelagic phase to their lifecycle. Instead, hatchlings grow to maturity in shallow coastal waters thought to be close to their natal beaches (DSEWPAC, 2012a).

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Species	Woodside Activity Area			BIAs		
	Browse	NWS/S	NWC	Mating	Foraging	Migration ³
Loggerhead turtle	✓	✓	-	No mating BIA identified within the NWMR	Foraging in the De Grey River area to Bedout Island Foraging on the Western Joseph Bonaparte Depression Foraging in the waters adjacent to James Price Point	Adult loggerhead turtles dispersing from Dirk Hartog Island beaches (near Shark Bay) have remained within WA waters from southern WA to the Kimberley. Turtles dispersing from the North-west Cape–Muiron Islands nesting area have ranged north as far as the Java Sea and the north-western Gulf of Carpentaria, and to south-west WA (DSEWPAC, 2012).
Olive ridley turtle	✓	✓	-	No mating BIA identified within the NWMR	Foraging in the Western Joseph Bonaparte Depression and Gulf Foraging in the Dampier Archipelago (islands to the west of the Burrup Peninsula)	Migration routes and distances between nesting beaches and foraging areas are not known for Australian olive ridley turtles.

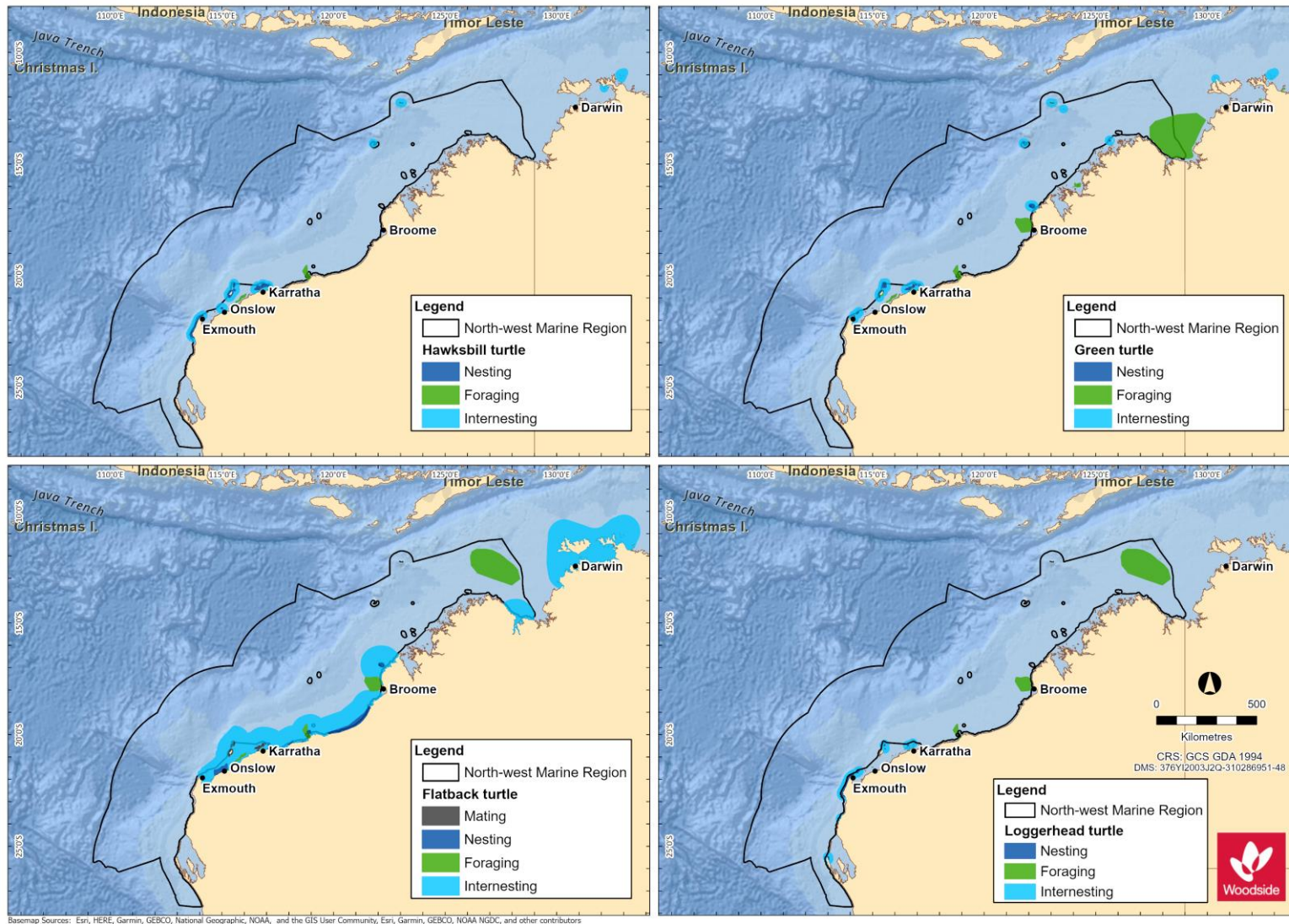


Figure 6-3 Marine turtle species BIAS within the NWMR

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6.4 Marine Turtle Summary for NWMR

Six of the seven marine turtle species occur within the Woodside activity areas. Across all three areas, globally significant breeding populations of four marine turtle species; the green, hawksbill, flatback and loggerhead turtle, have been recorded.

However, offshore waters do not represent biologically important habitat for marine turtles in any of the three Woodside activity areas. Isolated records of transient individuals (on post-nesting migration) are expected, but there is no evidence of important habitat or behaviours for marine turtles in offshore, open water environment of the NWS, in general.

6.4.1 Browse

The proposed Browse activity area includes major nesting areas that support globally significant breeding populations of two marine turtle species:

- the green turtle, including two distinct genetic stocks (Ashmore Reef and Scott Reef-Browse Island); and
- the flatback turtle, Cape Domett genetic stock.

Locations of habitat critical for each of the two species are outlined in **Table 6-2** and **Figure 6-2**.

BIAs for the green and flatback turtle are outlined in **Table 6-3** and **Figure 6-3**.

Table 6-4 Marine turtle key information for Browse activity area

Species / Genetic Stock	Key Information
Green Turtle	
Ashmore Reef Stock (G-AR)	<p>The G-AR stock nests in a localised area of the Indian Ocean in the Ashmore Reef and Cartier Island AMP areas. Population estimates are not available for Ashmore Reef, although annual breeding numbers are thought to be in the low hundreds (Whiting, 2000).</p> <p>Designated habitat critical for the G-AR stock are the nesting locations of Ashmore Reef and Cartier Reef, and an internesting buffer of 20 km radius around these rookeries, year-round with peak internesting activity occurring December to January (refer Table 6 of the Recovery Plan).</p> <p>Juvenile and adult turtles forage within the tidal/sub-tidal habitats of offshore islands and coastal waters with coral reef, mangrove, sand, rocky reefs, and mudflats where there are algal turfs or seagrass meadows present (Commonwealth of Australia, 2017).</p>
Scott Reef-Browse Island Stock (G-ScBr)	<p>The G-ScBr stock is a discrete unit known to nest at only two locations within the north-east Indian Ocean—Sandy Islet and Browse Island. There is currently very limited data available for the G-ScBr stock, therefore population numbers are not known.</p> <p>Designated habitat critical for the G-ScBr stock are the nesting locations of Sandy Islet and Browse Island, and an internesting buffer of 20 km radius around these rookeries, for the period November to March (refer Table 6 of the Recovery Plan).</p> <p>Surveys conducted at Scott Reef in 2006, 2008 and 2009 indicate that the summer months from late November to February are the preferred breeding season for green turtles at Sandy Islet (Guinea, 2009).</p> <p>Satellite tagging studies (Pendoley, 2005; Guinea, 2011) have provided an indication of the behaviour and migratory routes of adult green turtles leaving Scott Reef. Most animals appear to swim through South Reef lagoon and disperse toward the Western Australian mainland via two distinct post-nesting migration pathways; travelling east and north toward the Bonaparte Archipelago and then north along the coast to foraging areas in NT waters, or travelling south to Cape Leveque and then south along the coast to the Turtle Islands off the mouth of the De Grey River in the Pilbara region (Ferreira <i>et al.</i>, 2021).</p>

Species / Genetic Stock	Key Information
Flatback Turtle	
Cape Domett Stock (F-CD)	<p>Cape Domett is an important high density nesting area. Combined with a smaller site at Lacrosse Island, the F-CD stock is one of the largest flatback turtle stocks in Australia. Average nesting abundance at Cape Domett is estimated at 3250 females per year (Whiting <i>et al.</i>, 2008).</p> <p>Designated habitat critical for the F-CD stock are the nesting locations of Cape Domett and Lacrosse Island, and an interesting buffer of 60 km radius around these rookeries, year-round with peak interesting activity occurring July to September.</p> <p>Extending further than the habitat critical interesting buffer, an interesting buffer BIA of 80 km is located at Cape Domett and Lacrosse Island.</p>

6.4.2 North-west Shelf / Scarborough

The NWS / Scarborough activity area includes major nesting areas that support globally significant breeding populations of three marine turtle species, representing four discreet genetic stocks:

- the green turtle, NWS genetic stock;
- the hawksbill turtle, WA genetic stock; and
- the flatback turtle, South-west Kimberley stock and Pilbara genetic stocks.

Locations of habitat critical for each of the four species are outlined in **Table 6-2** and **Figure 6-2**.

BIAs for the green, hawksbill, and flatback are outlined in **Table 6-3** and **Figure 6-3**.

Table 6-5 Marine turtle key information for NWS / Scarborough activity area

Species / Genetic Stock	Key Information
Green Turtle	
NWS Stock (G-NWS)	<p>The G-NWS stock is one of the largest green turtle stocks in the world and the largest in the Indian Ocean. The G-NWS stock is estimated at approximately 20,000 individuals (DSEWPAC, 2012a) and the trend for the stock is reported as stable (Commonwealth of Australia, 2017).</p> <p>Major rookeries of the G-NWS stock within the NWS / Scarborough activity area are located at Barrow Island and the Montebello Islands. These areas are designated habitat critical for the stock and include an interesting buffer of 20 km radius around these rookeries, November to March.</p>
Hawksbill Turtle	
Western Australia Stock (H-WA)	<p>The H-WA stock is the largest in the Indian Ocean. The majority of the nesting for this stock is located in the Pilbara. The Dampier Archipelago has the largest nesting aggregation recorded. In particular, Rosemary Island supports the most significant hawksbill turtle rookery in the WA region and one of the largest in the Indian Ocean; approximately 500-1000 females nest on the island annually, more than at any other WA rookery (Pendoley, 2005; Pendoley <i>et al.</i>, 2016).</p> <p>Major rookeries of the H-WA stock within the NWS / Scarborough activity area are located at Rosemary Island, Delambre Island and the Montebello Islands. These areas are designated habitat critical for the stock and include an interesting buffer of 20 km radius around these rookeries, October to February.</p>
Flatback Turtle	
South-west Kimberley Stock (F-swKim)	<p>The genetic relationship between this nesting aggregation and the Cape Domett and Pilbara stocks is currently under review. Population numbers of the F-swKim stock are unknown.</p> <p>Major rookeries of the F-swKim stock are located at Eighty Mile Beach and Eco Beach. These areas are designated habitat critical for the stock and include an interesting buffer of 60 km radius around these rookeries, October to March.</p>

Species / Genetic Stock	Key Information
Pilbara Stock (F-Pil)	<p>The extent of genetic relatedness of flatback turtles along the WA coast is currently under review. Population numbers of the F-Pil stock are unknown. This stock nests on many islands in the Pilbara and southern Kimberley, with major rookeries at Mundabullangana Beach, Delambre Island and Barrow Island. These areas are designated habitat critical for the F-Pil stock and include an interesting buffer of 60 km radius around these rookeries, October to March.</p> <p>Extending further than the habitat critical interesting buffer, a year-round interesting buffer BIA of 80 km is located north and north-west of the Montebello Islands. However, use level for this BIA has been defined as very low (Commonwealth of Australia, 2017) and the habitat critical interesting buffer is the legally recognised area of protection under the EPBC Act <i>Significant Impact Guidelines 1.1 – Matters of National Environmental Significance</i>.</p> <p>Post-nesting satellite tracking indicates foraging occurs along the WA coast in water shallower than 130 m and within 315 km of shore (Commonwealth of Australia, 2017).</p>

6.4.3 North-west Cape

The North-west Cape activity area includes major nesting areas that support globally significant breeding populations of two marine turtle species, representing two discreet genetic stocks:

- the green turtle, NWS genetic stock; and
- the loggerhead turtle, Western Australia genetic stock.

Locations of habitat critical for each of the two species are outlined in **Table 6-2** and **Figure 6-2**.

BIAs for the green and loggerhead turtles are outlined in **Table 6-3** and **Figure 6-3**.

A 2018 survey, including on-beach monitoring of the Muiron Islands and Ningaloo Coast from North-west Cape to Bungelup (Rob *et al.*, 2019), supports the concept that North-west Cape and the Muiron Islands are major important nesting areas for green and loggerhead turtles, as identified in the Recovery Plan (Commonwealth of Australia, 2017).

Table 6-6 Marine turtle key information for North-west Cape activity area

Species / Genetic Stock	Key Information
Green Turtle	
NWS Stock (G-NWS)	<p>The G-NWS stock is one of the largest green turtle stocks in the world and the largest in the Indian Ocean. The G-NWS stock is estimated at approximately 20,000 individuals (DSEWPAC, 2012a) and the trend for the stock is reported as stable (Commonwealth of Australia, 2017).</p> <p>There is one major rookery of the G-NWS stock located within the North-west Cape activity area. Located on the mainland coast of the North-west Cape, this area is designated habitat critical for the stock and includes an interesting buffer of 20 km radius around the rookery, November to March.</p>
Loggerhead Turtle	
Western Australia Stock (LH-WA)	<p>The LH-WA stock is one of the largest in the world (Limpus, 2009). The trend for the stock is reported as stable (Commonwealth of Australia, 2017).</p> <p>Major rookeries of the LH-WA stock are located at Dirk Hartog Island, Muiron Islands and Gnaraloo Bay. These areas are designated habitat critical for the stock and include an interesting buffer of 20 km radius around these rookeries, November to May.</p> <p>Dirk Hartog Island in the Shark Bay Marine Park, with an average of 122 nests per day over 2.1 km (Reinhold and Whiting, 2014), is recognised as the most important loggerhead turtle rookery in WA (Commonwealth of Australia, 2016; as cited in Rob <i>et al.</i>, 2019).</p>

6.5 Sea Snakes

Sea snakes are commonly found in the NWMR and NMR, but less so in the SWMR, and occupy three broad habitat types: shallow water coral reef and seagrass habitats, deepwater soft bottom habitats away from reefs, and surface water pelagic habitats (Guinea, 2007a).

There are 25 listed species of sea snake reported within or adjacent to the NWMR (Guinea, 2007a; Udyawer *et al.*, 2016), of which four are endemic to reef habitats in the remote parts of the region:

- dusky sea snake (*Aipysurus fuscus*);
- large headed sea snake (*Hydrophis pacificus*);
- short-nosed sea snake (*Aipysurus apraefrontalis*); and
- leaf-scaled sea snake (*Aipysurus foliosquama*).

The short-nosed sea snake and the leaf-scaled sea snake are listed threatened species (Critically Endangered) under the EPBC Act (**Table 6-7**).

There is currently limited knowledge about the ranges and distribution patterns of sea snake species in the NWMR, in addition to a lack of understanding of population status and threats. Recent findings of *A. apraefrontalis* and *A. foliosquama* in locations outside of their previously defined ranges have highlighted the lack of information on species distributions in the NWMR (Udyawer *et al.*, 2016). Udyawer *et al.* (2020) used a correlative modelling approach to understand habitat associations and identify suitable habitats for five sea snake species (*A. apraefrontalis*, *A. foliosquama*, *A. fuscus*, *A. l. pooleorum* and *A. tenuis*). Species-specific habitat suitability was modelled across 804,244 km² of coastal waters along the NWS, and the resulting habitat suitability maps enabled the identification of key locations of suitable habitat for these five species (refer **Table 6-6**).

No habitat critical to survival or BIAs for sea snake species have been identified in the NWMR. While the Ashmore Reef and Cartier Island AMPs have been recognised for their high diversity and density of sea snakes (DSEWPAC, 2012a), surveys have revealed a steep decline in sea snake numbers at Ashmore Reef (Guinea, 2007b; Lukoschek *et al.*, 2013). Leaf-scaled and short-nosed sea snakes have been absent from surveys at Ashmore Reef since 2001, despite an increase in survey intensity (Guinea, 2006, 2007b; Guinea and Whiting, 2005; Lukoschek *et al.*, 2013). The reason for the decline is unknown.

Table 6-7 Information on the two threatened sea snake species within the NWMR

Species	Preferred Habitat and Diet	Habitat Location
Short-nosed sea snake	Preferred habitat: Primarily on the reef flats or in shallow waters of the outer reef edges to depths of 10 m (Minton <i>et al.</i> , 1975). Typically, movement is restricted to within 50 m of reef flat habitat (Guinea and Whiting, 2005). Diet: Primarily fishes and eels.	The short-nosed sea snake has been recorded from Exmouth Gulf to the reefs of the Sahul Shelf, although most records come from Ashmore and Hibernia reefs (Guinea and Whiting, 2005). Key locations of suitable habitat: Ashmore Reef, Exmouth Gulf, Muiron Islands, Montebello Islands (Udyawer <i>et al.</i> , 2020).
Leaf-scaled sea snake	Preferred habitat: The leaf-scaled sea snake occurs in shallow protected areas of reef flats, typically in water depth less than 10 m. Diet: Primarily shallow water coral-associated wrasse, gudgeons, clinids and eels (McCosker, 1975; Voris, 1972; Voris and Voris, 1983)	The leaf-scaled sea snake has only been recorded at Ashmore and Hibernia reefs (Guinea and Whiting, 2005), indicating it has a very limited distribution. Key locations of suitable habitat: Ashmore Reef, Shark Bay, Exmouth Gulf, Barrow Island and Montebello Islands (Udyawer <i>et al.</i> , 2020).

6.6 Crocodiles

The salt-water crocodile (*Crocodylus porosus*) is a listed migratory species under the EPBC Act known to occur within the NWMR. The species is found in most major river systems of the Kimberley, including the Ord, Patrick, Forrest, Durack, King, Pentecost, Prince Regent, Lawley, Mitchell, Hunter, Roe and Glenelg rivers. The largest populations occur in the rivers draining into the Cambridge Gulf and the Prince Regent River and Roe River systems. There have also been isolated records in rivers of the Pilbara region, around Derby near Broome and as far south as Carnarvon on the mid-west coast.

No BIAs for salt-water crocodile have been identified in the NWMR.

7. MARINE MAMMALS

7.1 Regional Context

The offshore waters of WA include important habitat for marine mammals, including areas that support key life stages such as breeding, foraging, and migration. Of the 45 species of cetacean occurring in Australian waters, 27 species occur regularly in the waters of the NWMR, nine species in the waters of the NMR and 33 species in the SWMR. The waters of the NWMR and the NMR also support significant populations of dugong (DSEWPAC, 2012a, c).

The NWMR is an important migratory pathway between feeding grounds in the Southern Ocean and breeding grounds in tropical waters of the NWMR for several cetacean species (DSEWPAC, 2012a). Numerous large mysticetes (baleen whale) species, in particular the humpback whale, are known to utilise the region for migration and calving, and the pygmy blue whale for foraging and as a migration pathway between southern feeding and northern breeding/feeding areas, north of the equator.

The SWMR is an important area for numerous marine mammal species including pinniped species, large, migratory whale species and resident coastal whale and dolphin species (DSEWPAC, 2012b).

The NMR and adjacent areas are important for several species of cetacean, particularly inshore dolphin species. These species, and other marine mammals, rely on the waters of the NMR and adjacent coastal areas for breeding and foraging. However, there is little knowledge of the seasonal movements, migrations and breeding seasonality for many of the marine mammal species in the NMR due to lack of extensive surveys (DSEWPAC, 2012c).

Table 7-1 outlines the threatened and migratory marine mammal species that may occur within the NWMR, with their conservation status and relevant recovery plans and/or conservation advice.

Table 7-1 Marine mammal species identified by the EPBC Act PMST as occurring within the NWMR

Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999			WA Biodiversity Conservation Act 2016	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	
Cetaceans - Mysticeti						
<i>Balaenoptera musculus</i>	Blue whale	Endangered	Migratory	Cetacean	Endangered	Conservation Management Plan for the Blue Whale - A Recovery Plan under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> 2015-2025 (Commonwealth of Australia, 2015a)
<i>Eubalaena australis</i>	Southern right whale	Endangered	Migratory	Cetacean	Vulnerable	Conservation Management Plan for the Southern Right Whale: A Recovery Plan under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> 2011-2021 (DSEWPAC, 2012d)
<i>Balaenoptera borealis</i>	Sei whale	Vulnerable	Migratory	Cetacean	Endangered	Conservation Advice <i>Balaenoptera borealis</i> sei whale (Threatened Species Scientific Committee, 2015a)
<i>Megaptera novaeangliae</i>	Humpback whale	Vulnerable	Migratory	Cetacean	Conservation dependent	Conservation Advice <i>Megaptera novaeangliae</i> humpback whale (Threatened Species Scientific Committee, 2015b)
<i>Balaenoptera physalus</i>	Fin whale	Vulnerable	Migratory	Cetacean	Endangered	Conservation Advice <i>Balaenoptera physalus</i> fin whale (Threatened Species Scientific Committee, 2015c)
<i>Balaenoptera edeni</i>	Bryde's whale	N/A	Migratory	Cetacean	N/A	N/A
<i>Balaenoptera bonaerensis</i>	Antarctic minke whale	N/A	Migratory	Cetacean	N/A	N/A
Cetaceans - Odontoceti						
<i>Physeter macrocephalus</i>	Sperm whale	N/A	Migratory	Cetacean	Vulnerable	N/A
<i>Orcinus orca</i>	Killer whale	N/A	Migratory	Cetacean	N/A	N/A
<i>Orcaella heinsohni</i>	Australian snubfin dolphin	N/A	Migratory	Cetacean	Priority	N/A
<i>Sousa chinensis</i>	Indo-Pacific humpback dolphin	N/A	Migratory	Cetacean	Priority	N/A

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Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999			WA Biodiversity Conservation Act 2016	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	
<i>Tursiops aduncus</i>	Spotted bottlenose dolphin (Arafura/Timor Sea populations)	N/A	Migratory	Cetacean	N/A	N/A
Sirenians and Pinnipeds						
<i>Dugong dugon</i>	Dugong	N/A	Migratory	Marine	Other protected fauna	N/A
<i>Neophoca cinerea</i>	Australian sea lion	Endangered	N/A	Marine	Vulnerable	Recovery Plan for the Australian Sea Lion (<i>Neophoca cinerea</i>) 2013 (DSEWPAC, 2013a) Conservation Advice <i>Neophoca cinerea</i> Australian Sea Lion (Threatened Species Scientific Committee, 2020a) (in effect under the EPBC Act from 23-Dec-2020)

7.2 Cetaceans in the NWMR

Cetaceans are generally widely distributed and highly mobile. In general, distribution patterns reflect seasonal feeding areas, characterised by high productivity, and migration routes associated with reproductive patterns. The NWMR is thought to be an important migratory pathway between feeding grounds in the Southern Ocean and breeding grounds in tropical waters for several cetacean species (DSEWPAC, 2012a).

From the Protected Matters search, 34 EPBC Act listed species were recorded as potentially occurring or having habitat within the NWMR (**Appendix A**). Of those, 12 cetacean species are listed as threatened and/or migratory, including baleen whales, toothed whales and dolphins that occur within the NWMR (**Table 7-2**).

7.3 Dugongs in the NWMR

The dugong is listed as migratory under the EPBC Act. Dugongs inhabit seagrass meadows in coastal waters, estuarine creeks and streams, and reef systems (DSEWPAC, 2012a).

Some of the coastal waters adjacent to the NWMR support significant populations of dugongs, including Shark Bay, Exmouth Gulf, in and adjacent to Ningaloo Reef, in coastal waters along the Kimberley coast, and on the edge of the continental shelf at Ashmore Reef (DEWHA, 2008).

Although the patterns of dugong movement in WA are not well understood, it is thought that dugongs move in response to availability of seagrass (Marsh *et al.*, 1994; Preen *et al.*, 1997) and water temperature.

There are a number of BIAs for dugong within and adjacent to waters of the NWMR (refer **Section 7.5**).

7.4 Pinnipeds in the NWMR

The Australian sea lion is listed as a species that may occur, or may have habitat within the NWMR (Protected Matters search - **Appendix A**). It is included here as the Australian sea lion is the only pinniped endemic to Australia (Strahan, 1983) and has been recorded within the southern extent of the NWMR at Shark Bay, WA (Kirkwood *et al.*, 1992). The most northern known breeding colony is at the Houtman Abrolhos Islands in the SWMR. The Australian sea lion's breeding range extends from the Houtman Abrolhos Islands, WA to The Pages Island, east of Kangaroo Island, SA. The Australian sea lion was listed as endangered in 2020 (Threatened Species Scientific Committee, 2020a). An assessment of the status and trends in abundance of this endemic, coastal pinniped species (Goldsworthy *et al.* 2021) documented an overall reduction in pup abundance over three generations, providing strong evidence that the species meets IUCN endangered criteria.

There are no BIAs for the Australian sea lion in the NWMR.

Table 7-2 Information on the threatened/migratory marine mammal species within the NWMR

Species	Key Information
Baleen whales (Mysticeti)	
Humpback whale	<p>In Australian waters two genetically distinct populations migrate annually along the west (Group IV) and east coasts (Group V) between May and November. In WA, the migration pathway for the Group IV population (also known as Breeding Stock D) extends from Albany to the Kimberley coastline, passing through the NWMR (Threatened Species Scientific Committee, 2015b). Since the 1982 moratorium on commercial whaling population numbers have recovered significantly; from approximately 2000 to 3000 individuals in 1991, to between 19,200–33,850 individuals in 2008 (Bannister and Hedley, 2001; Bejder <i>et al.</i>, 2019; Hedley <i>et al.</i>, 2011). Aerial surveys off the WA coast undertaken between 2000 and 2008 produced a population estimate for the Group IV population of 26,100 individuals (CI 20,152–33,272) in 2008 (Salgado Kent <i>et al.</i>, 2012). Current population growth for the Group IV population is estimated to be between 9.7 and 13% per annum (Threatened Species Scientific Committee, 2015b). Using the Salgado-Kent <i>et al.</i> (2012) estimate of 26,100 individuals and an annual population growth rate of ~10%, current population size could be in excess of 75,000 individuals (Woodside, 2019).</p> <p>The Group IV population migrates northward from their Antarctic feeding grounds around May each year, reaching the NWMR around early June. The southward migration subsequently starts in mid-September, around the time of breeding and calving (typically August to September) (Threatened Species Scientific Committee, 2015b). Within the NWMR there are key calving areas between Broome and the northern end of Camden Sound, and resting areas in the southern Kimberley region, Exmouth Gulf and Shark Bay. In particular, high numbers of humpback whales are observed in Camden Sound and Pender Bay from June to September each year (Threatened Species Scientific Committee, 2015b). There are reports of neonates further south, suggesting that the calving areas may be poorly defined. Aerial photogrammetric surveys in 2013 and 2015 recorded large numbers of humpback whale calves along North-west Cape, with estimated minimum relative calf abundance of 463–603 in 2013 and 557–725 in 2015 (Irvine <i>et al.</i>, 2018). The majority of calves sighted in both years (85% in 2013; 94% in 2015) were neonates, and these observations indicate that a minimum of approximately 20% of the expected number of calves of this population are born near, or south of, North-west Cape. Thus, the calving grounds for the Group IV population extend south from Camden Sound to at least North-west Cape, 1000 km south-west of the currently recognized calving area (Irvine <i>et al.</i>, 2018).</p> <p>There are BIAs for migration and breeding and calving for the humpback whale along the WA coast and within the NWMR (refer Table 7-3 and Figure 7-1).</p>
Blue whale	<p>There are two recognised sub-species of blue whale in the Southern Hemisphere, both of which are recorded in Australian waters. These are the southern (or 'true') blue whale (<i>Balaenoptera musculus</i>) and the 'pygmy' blue whale (<i>Balaenoptera musculus breviceauda</i>) (Commonwealth of Australia, 2015a). In general, southern blue whales occur in waters south of 60°S and pygmy blue whales occur in waters north of 55°S (i.e. not in the Antarctic). On this basis, nearly all blue whales sighted in the NWMR are likely to be pygmy blue whales.</p> <p>The East Indian Ocean (EIO) pygmy blue whale population is seasonally distributed from Indonesia (a potential breeding ground) to south-west of Australia and east across the Great Australian Bight and Bonney Upwelling to beyond the Bass Strait (Blue Planet Marine, 2020). Migration seems to be variable, with some individuals appearing as resident to areas of high productivity and others undertaking migrations across long distances (Commonwealth of Australia, 2015a). McCauley <i>et al.</i> (2018) describe three migratory stages around Australia for the EIO pygmy blue whale population: a 'southbound migratory stage' where whales travel southwards from Indonesian waters offshore from the WA coastline, mostly from October to December but possibly into January of the following year; a protracted 'southern Australian stage' (January to June) where animals spread across southern waters of the Indian Ocean and south of Australia; and a 'northbound migratory stage' (April to August) where animals travel north back to Indonesia again.</p> <p>There are currently insufficient data to accurately estimate population numbers of the pygmy blue whale in Australian waters (Blue Planet Marine, 2020; Commonwealth of Australia, 2015a). There are, however, two estimates of population size of the EIO pygmy blue whale for WA. McCauley and Jenner (2010) calculated the population to be between 662 and 1559 individuals in 2004 based on passive acoustics (whale vocalisations), and Jenner <i>et al.</i> (2008) (based on photographic mark and recapture) calculated between 712 and 1754 individuals, but both estimates did not account for animals</p>

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Species	Key Information
	<p>travelling further west into the Indian Ocean (McCauley <i>et al.</i>, 2018). More recent passive acoustic data estimates a 4.3% growth rate that applies to the proportion of EIO pygmy blue whales seasonally present in offshore water of the south-eastern Australia and may not reflect the full population but does imply an increasing population (McCauley <i>et al.</i>, 2018).</p> <p>The pygmy blue whale is typically present in the Perth Canyon from November to June, with an observed peak between March and May (Commonwealth of Australia, 2015a; Blue Planet Marine, 2020). The pygmy blue whale feeds in the Perth Canyon at depths of 200 to 300 m, which overlaps the typical distribution of krill (200–500 m water depth (day) to surface (night) (McCauley <i>et al.</i>, 2004; Commonwealth of Australia, 2015a). Other possible feeding grounds off the WA coast include the wider area around the Perth Canyon, and possible foraging areas off the Ningaloo Coast and at Scott Reef (Commonwealth of Australia, 2015a).</p> <p>Refer Table 7-3 and Figure 7-2 for the location and type of BIAs for blue whales in the NWMR. There is a migratory BIA for the pygmy blue whale within WA waters, which extends for most of the length of the NWMR within offshore waters.</p>
Bryde's whale	<p>The Bryde's whale is the least migratory of its genus and is restricted geographically from the equator to approximately 40°N and S, or the 20° isotherm (Bannister <i>et al.</i>, 1996). The species is known to exhibit inshore and offshore forms in other international locations that vary in morphology and migratory behaviours (Bannister <i>et al.</i>, 1996). This appears to also be the case within Australian waters. Bryde's whales have been identified as occurring in both oceanic and inshore waters, with the only key localities recognised in WA being in the Houtman Abrolhos Islands and north of Shark Bay (Bannister <i>et al.</i>, 1996). Data suggests offshore whales migrate seasonally, heading towards warmer tropical waters during the winter; however, information about migration within the NWMR is not well known (McCauley and Duncan, 2011). McCauley (2011) detected Bryde's whales using acoustic loggers deployed in and around Scott Reef from 2006 to 2009. Other acoustic logger data of Bryde's whale vocalisations recorded between Ningaloo and north of Darwin showed no apparent trends or seasonality (McCauley, 2011).</p> <p>There are no identified BIAs for this species in the National Conservation Values Atlas.</p>
Southern right whale	<p>The southern right whale occurs primarily in waters between about 20°S and 60°S and moves from high latitude feeding grounds in summer to warmer, low latitude, coastal locations in winter (Bannister <i>et al.</i>, 1996). Southern right whales aggregate in calving areas along the south coast of WA outside of the NWMR. However, there have been sightings in waters of the NWMR as far north as Ningaloo (Bannister and Hedley, 2001), and a stranding record exists for the far north Kimberley coast (ALA, 2020). Southern right whale calving grounds are found at mid to lower latitudes and are occupied during the austral winter and early-mid spring. They are regularly present on the southern Australian coast from about mid-May to mid-November, and peak periods for mating are from mid-July through August. Mating occurs within these breeding grounds as evidenced by many observations of intromission and mating behaviours. Southern right whales in south-western Australia appear to be increasing at the maximum biological rate but there is limited evidence of increase in south-eastern Australian waters (DSEWPAC, 2012d).</p> <p>There are no identified BIAs for this species in the NWMR.</p>
Antarctic minke whale	<p>The Antarctic minke whale is distributed worldwide and has been recorded off all Australian states (but not in the NT), feeding in cold waters and migrating to warmer waters to breed. It is thought that the Antarctic minke whale migrates up the WA coast to about 20°S to feed and possibly breed (Bannister <i>et al.</i>, 1996); however, detailed information about timing and location of migrations and breeding grounds within the NWMR is not well known. In the high latitudinal winter breeding grounds in other regions, the species appears to be distributed off the continental shelf edge. No population estimates are available for Antarctic minke whales in Australian waters.</p> <p>There are no identified BIAs for this species in the National Conservation Values Atlas.</p>
Sei whale	<p>The sei whale is a baleen whale with a worldwide oceanic distribution and is expected to seasonally migrate between low latitude wintering areas and high latitude summer feeding grounds (Bannister <i>et al.</i>, 1996; Prieto <i>et al.</i>, 2012). There are no known mating or calving areas in Australian waters. The species has a preference for deep waters, typically occurs in oceanic basins and continental slopes (Prieto <i>et al.</i>, 2012), and exhibits a migration pathway influenced by seasonal feeding and breeding patterns. Sei whales have been infrequently recorded in Australian waters (Bannister <i>et al.</i>, 1996). Reliable estimates of the sei whale population size in Australian waters are currently not possible due to a lack of dedicated surveys and their elusive characteristics. Similarly, the extent of occurrence and area of occupancy of sei whales in Australian waters cannot be calculated due to the</p>

Species	Key Information
	<p>rarity of sighting records. They will typically travel in small pods of three to five individuals, with some segregation by age, sex and reproductive status. Calving grounds are presumed to exist in low latitudes with mating and calving potentially occurring during winter months (Threatened Species Scientific Committee, 2015a).</p> <p>There are no known mating or calving areas in Australian waters, and there are no identified BIAs for this species in the National Conservation Values Atlas.</p>
Fin whale	<p>The fin whale is a large baleen whale distributed worldwide. Fin whales migrate annually between high latitude summer feeding grounds and lower latitude over-wintering areas (Bannister <i>et al.</i>, 1996) and follow oceanic migration paths. The species is uncommonly encountered in coastal or continental shelf waters. Australian Antarctic waters are important feeding grounds for fin whales but there are no known mating or calving areas in Australian waters (Morrice <i>et al.</i>, 2004). The species has been observed in groups of six to 10 individuals, as well as in pairs and alone (Threatened Species Scientific Committee, 2015c). Accurate distribution patterns are not known within Australian waters and the majority of data are from stranding events.</p> <p>Fin whales have been recorded vocalising off the Perth Canyon, WA, between January and April 2000 (McCauley <i>et al.</i>, 2000). It is currently not possible to accurately estimate the population size of fin whales in Australian waters predominantly due to the species' behaviour and local ecology, as the proportion of time they spend at the surface varies greatly depending on these factors. In addition, natural fluctuations of fin whales in Australian waters are unknown; however, long-range movements do appear to be prey-related. A recent study by Aulich <i>et al.</i> (2019) used passive acoustic monitoring as a tool to identify the migratory movements of fin whales in Australian waters. On the west coast, the earliest arrival of these animals occurred at Cape Leeuwin in April, and between May and October they migrated along the WA coastline to the Perth Canyon, which likely acts as a way-station for feeding (Aulich <i>et al.</i>, 2019). Some whales were found to continue migrating as far north as Dampier (Aulich <i>et al.</i>, 2019).</p> <p>There are no identified BIAs for this species in the National Conservation Values Atlas.</p>
Toothed whales (Odontoceti)	
Sperm whale	<p>Sperm whales are the largest of the toothed whales and are distributed worldwide in deep waters (greater than 200 m) off continental shelves and sometimes near shelf edges (Bannister <i>et al.</i>, 1996). The species tends to inhabit offshore areas at depths of 600 m or more and is uncommon in waters less than 300 m deep (Ceccarelli <i>et al.</i>, 2011). There is limited information about sperm whale distribution in Australian waters, however, they are usually found in deep offshore waters, with more dense populations close to continental shelves and canyons. In the open ocean, there is a generalised movement of sperm whales southwards in summer, and corresponding movement northwards in winter, particularly for males. Detailed information about the distribution and migration patterns of sperm whales off the WA coast is not available. Females with young may reside within the NWMR all year round, males may migrate through the region and the species may be associated with canyon habitats (Ceccarelli <i>et al.</i>, 2011).</p> <p>Sperm whales have been recorded in deep waters off North-west Cape and appear to occasionally venture into shallower waters in other areas. Twenty-three (23) sightings of sperm whales (variable pod sizes, ranging from one to six animals) were recorded by marine mammal observers (MMOs) during the North West Cape MC3D marine seismic survey (December 2016 to April 2017) (Woodside, 2020). These animals were observed in deep, continental slope waters of the Montebello Saddle (maximum distance of approximately 90 km from North-west Cape), and the waters overlying the Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula KEF. The deep waters above the gully/saddle on the inner edge of the plateau (the Montebello Saddle) are thought to be important for sperm whales that may feed in the region (based on 19th Century whaling records; Townsend, 1935).</p> <p>There are no identified BIAs for this species in the NWMR.</p>
Killer whale	<p>The preferred habitat of killer whales includes oceanic, pelagic and neritic (relatively shallow waters over the continental shelf) regions, in both warm and cold waters. Killer whales appear to be more common in cold, deep waters; however, they have been observed along the continental slope and shelf, particularly near seal colonies, as well as in shallow coastal areas of WA (Bannister <i>et al.</i>, 1996; Thiele and Gill, 1999). The total number of killer whales in Australian waters is unknown, however, it may be that the total number of mature animals within waters around the continent is less than 10,000. Killer whales are known to make seasonal movements, and probably follow regular migratory routes, but no information is available for the</p>

Species	Key Information
	<p>species in Australian waters. Killer whales are top-level carnivores, and there are reports from around Australia of attacks on dolphins, juvenile humpback whales, blue whales, sperm whales, dugongs and Australian sea lions (Bannister <i>et al.</i>, 1996). Killer whales are known to target humpback whales, particularly calves, off Ningaloo Reef during the humpback southern migration season (Pitman <i>et al.</i>, 2015). Overall, observations suggest that humpback calves are a predictable, plentiful, and readily taken prey source for killer whales off Ningaloo Reef for at least five months of the year. Additionally, there are records of killer whales attacking dugongs in Shark Bay (Anderson and Prince, 1985). However, there are no recognised key localities or important habitats for killer whales within the NWMR (DSEWPAC, 2012a). There are no identified BIAs for this species in the NWMR.</p>
Australian snubfin dolphin	<p>Stranding and museum specimen records indicate that Australian snubfin dolphins occur only in waters off northern Australia, from approximately Broome on the west coast to the Brisbane River on the east coast (Parra <i>et al.</i>, 2002). Aerial and boat-based surveys indicate that Australian snubfin dolphins occur mostly in protected shallow waters close to the coast, and close to river and creek mouths (Parra, 2006; Parra <i>et al.</i>, 2006; Parra <i>et al.</i>, 2002). Within the NWMR, species has been found in the shallow coastal waters and estuaries along the Kimberley coast. Beagle and Pender bays on the Dampier Peninsula, and tidal creeks around Yampi Sound and between Kuri Bay and Cape Londonderry are important areas for Australian snubfin dolphins (DEWHA, 2008). Roebuck Bay has generally been considered the south-western limit of snubfin dolphin distribution across northern Australia, but the species has been recorded in Port Hedland harbour, the Dampier Archipelago, Montebello Islands, Exmouth Gulf and off North-west Cape (Allen <i>et al.</i>, 2012). A first comprehensive catalogue of snubfin dolphin sightings has been compiled for the Kimberley, north-west Western Australia (Bouchet <i>et al.</i> 2021) and documented that snubfin dolphins are consistently encountered in shallow water (<21 m depth) close to (<15 km) freshwater inputs with high detection rates in known hotspots such as Roebuck Bay and Cygnet Bay as well as suitable coastal habitat in the wider Kimberley region. Refer Table 7-3 and Figure 7-3 for the location and type of BIAs for Australian snubfin dolphins in the NWMR.</p>
Indo-Pacific humpback dolphin (Australian humpback dolphin)	<p>Previously included with <i>Sousa chinensis</i>, the Australian humpback dolphin (<i>S. sahalensis</i>) was elevated to a species in 2014. <i>S. chinensis</i> is now applied for humpback dolphins in the eastern Indian and western Pacific Oceans and <i>S. sahalensis</i> for humpback dolphins in the waters of the Sahul Shelf from northern Australia to southern New Guinea (Jefferson and Rosenbaum, 2014). The Australian humpback dolphin is listed as <i>S. chinensis</i> under EPBC Act.</p> <p>The Australian humpback dolphin (referred to as 'humpback dolphin' hereafter) inhabits the tropical/subtropical waters of the Sahul Shelf across northern Australia and southern Papua New Guinea (Jefferson and Rosenbaum, 2014). Based on historical stranding data, museum specimens and opportunistic sightings collected during aerial and boat-based surveys for other fauna it has been inferred that humpback dolphins occur from the WA/NT border south-west to Shark Bay (Hanf <i>et al.</i>, 2016). Allen <i>et al.</i> (2012) suggested that humpback dolphins use a range of inshore habitats, including both clear and turbid coastal waters across northern WA. The waters surrounding North-west Cape are an important area for the species. Boat-based surveys up to 5 km out from the coast (Brown <i>et al.</i>, 2012) recorded humpback dolphins from 0.3 to 4.5 km away from shore and in depths ranging from 1.2 to 20 m, with a mean of ~8 m. Other studies around North-west Cape, surveying waters up to 5 km from the coast, recorded humpback dolphins in water depths of up to 40 m (Hanf <i>et al.</i>, 2016). Based on density, site fidelity and residence patterns, North-west Cape is clearly an important habitat toward the south-western limit of this species' range (Hunt <i>et al.</i>, 2017).</p> <p>Aerial surveys targeting dugongs over the western Pilbara have recorded humpback dolphins more than 60 km from the mainland in shallow shelf waters (i.e. <30 m deep) near Barrow Island and the western Lowendal Islands (Hanf, 2015). The species has also been recorded in fringing coral reef and shallow, sheltered sandy lagoons at the Montebello Islands (Raudino <i>et al.</i>, 2018). Over the past ten years a number of studies have focused on populations of humpback dolphins along the Kimberley coast, including Roebuck Bay, the Dampier Peninsula, Cone Bay, Yampi Sound, Prince Regent River and the Cambridge Gulf (Brown <i>et al.</i>, 2016).</p> <p>Refer Table 7-3 and Figure 7-4 for the location and type of BIAs for Indo-Pacific humpback dolphins in the NWMR.</p>
Indo-Pacific bottlenose dolphin (Spotted bottlenose dolphin)	<p>There are four known sub-populations of spotted bottlenose dolphins, of which the Arafura/Timor Sea populations were identified as potentially occurring within the NWMR. The species is restricted to inshore areas such as bays and estuaries, nearshore waters, open coast environments, and shallow offshore waters including coastal areas around oceanic islands, from Shark Bay to the western edge of the Gulf of Carpentaria. The species</p>

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Species	Key Information
	forages in a range of habitats but is generally restricted to water depths of less than 200 m (DSEWPAC, 2012a). Important foraging/breeding areas include the shallow coastal waters and estuaries along the Kimberley coast and Roebuck Bay. Refer Table 7-3 the location and type of BIAs for spotted bottlenose dolphins in the NWMR.
Sirenians	
Dugong	Dugongs are distributed along the WA coast throughout the Gascoyne, Pilbara and Kimberley. Specific areas supporting dugong populations include: Shark Bay; Ningaloo and Exmouth Gulf; the Pilbara coast (Exmouth Gulf to De Grey River [Marsh <i>et al.</i> , 2002]); and Eighty Mile Beach and the Kimberley coast, including Roebuck Bay (Brown <i>et al.</i> , 2014). Dugong distribution is correlated with the seagrass habitats upon which it feeds, although water temperature has also been correlated with dugong movements and distribution (Preen <i>et al.</i> , 1997; Preen, 2004). Dugongs are known to migrate between seagrass habitats (hundreds of kilometres) (Sheppard <i>et al.</i> , 2006), and in Shark Bay they exhibit seasonal movements as a behavioural thermoregulatory response to winter water temperatures (Holley <i>et al.</i> , 2006; Marsh <i>et al.</i> , 2011). Aerial surveys since the mid-1980s indicate that dugong populations are now stable at a regional scale in Shark Bay and in the Exmouth/Ningaloo Reef. Refer Table 7-3 and Figure 7-5 for the location and type of BIAs for dugong in the NWMR.
Pinnipeds	
Australian sea lion	<p>The Australian sea lion is the only endemic pinniped (true seals, fur seals and sea lions) in Australian waters. It is a member of the Otariidae (eared seals) family. The birth interval in Australian sea lions is around 17–18 months. The Australian sea lion is unique among pinnipeds in being the only species that has a non-annual breeding cycle that is also temporally asynchronous across its range (DSEWPAC, 2013a; Threatened Species Scientific Committee, 2020a). This means the breeding period (copulation and birthing) in one colony will occur at different times to breeding in another colony. The Australian sea lion is considered to be a specialised benthic forager—that is, it feeds primarily on the sea floor. Studies have shown that the species will eat a range of prey, including fish, cephalopods (squid, cuttlefish and octopus), sharks, rays, rock lobsters and penguins (DSEWPAC, 2013a; Threatened Species Scientific Committee, 2020a). The Australian sea lion feeds on the continental shelf, most commonly in depths of 20–100 m, and they typically travel up to about 60 km from their colony on each foraging trip, with a maximum distance of around 190 km when over shelf waters.</p> <p>The current breeding distribution of the Australian sea lion extends from the Houtman Abrolhos Islands on the west coast of WA to the Pages Islands in SA. Sites for the 58 breeding colonies occurring in WA and SA are designated as habitat critical to the survival of the species under the Recovery Plan for the Australian sea lion (DSEWPAC, 2013a). Of these, four are located in the SWMR along the west coast of WA: Abrolhos Islands (Easter Group), Beagle Island, North Fisherman Island and Buller Island. There are also a number of foraging BIAs for both males and females along the west coast, extending from the Abrolhos Islands south to Rockingham.</p> <p>There is no designated habitat critical to survival or identified BIAs for this species in the NWMR. Figure 7-6 shows the foraging BIAs for the Australian sea lion to the south of the NWMR.</p>

7.5 Biological Important Areas in the NWMR

BIAs representing important life cycle stages and behaviours for six species of marine mammal in the NWMR: the humpback whale, the pygmy blue whale, Australian snubfin dolphin, Australian humpback dolphin, spotted bottlenose dolphin and dugong, are presented in **Table 7-3**.

Table 7-3 Marine mammal BIAs within the NWMR

Species	Woodside Activity Area			BIAs				
	Browse	NWS/S	NWC	Resting	Foraging	Breeding	Calving	Migration
Humpback whale ¹	✓	✓	✓	Shark Bay Exmouth Gulf (north migration – early June) (south migration – late Aug to Oct) Southern Kimberley region	No foraging BIA identified within the NWMR	Kimberley coast from the Lacepede Islands to north of Camden Sound (mid Aug – early Sept)	Core calving in waters off the Kimberley coast from the Lacepede Islands to north of Camden Sound (mid Aug – early Sept)	Southern border of the NWMR to north of the Kimberley (arrive June)
Blue whale and Pygmy blue whale ^{1 2}	✓	✓	✓	No resting BIA identified within the NWMR	Possible foraging areas off Ningaloo and Scott Reef	No breeding BIA identified within the NWMR	No calving BIA identified within the NWMR	Augusta to Derby. Along the shelf edge at depths of 500 m to 1000 m; appear close to Ningaloo coast Montebello Islands area on southern migration (north: April – Aug) (south: Oct – late Dec)
Australian snubfin dolphin ¹	✓	✓	-	No resting BIA identified within the NWMR	Roebuck Bay Cambridge Gulf Camden Sound area King Sound (south) King Sound (north) Yampi Sound Talbot Bay Maret Islands Bigge Island Admiralty Gulf Parry Harbour Bougainville Peninsula Vansittart Bay Anjo Peninsula Napier	Roebuck Bay Cambridge Gulf Camden Sound area King Sound (south) King Sound (north) Yampi Sound Talbot Bay Maret Islands Bigge Island Admiralty Gulf Parry Harbour Bougainville Peninsula Vansittart Bay, Anjo Peninsula Napier Broome Bay Deep Bay Prince Regent River King George River Cape Londonderry	Roebuck Bay Cambridge Gulf Camden Sound area King Sound (south) King Sound (north) Yampi Sound Talbot Bay Maret Islands Bigge Island Admiralty Gulf Parry Harbour Bougainville Peninsula Vansittart Bay Anjo Peninsula Napier Broome Bay Deep Bay Prince Regent River	No migration BIA identified within the NWMR

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Species	Woodside Activity Area			BIAs				
	Browse	NWS/S	NWC	Resting	Foraging	Breeding	Calving	Migration
					Broome Bay Deep Bay Prince Regent River King George River Cape Londonderry Ord River	Ord River	King George River Cape Londonderry Ord River	
Indo-Pacific humpback dolphin	✓	✓	-	No resting BIA identified within the NWMR	Roebuck Bay Willie Creek Prince Regent River King Sound (north) Yampi Sound Talbot Bay Walcott Inlet Doubtful Bay Deception Bay Augustus Island Maret Islands Bigge Island King Sound, southern sector Vansittart Bay, Anjo Peninsula	Roebuck Bay Willie Creek Prince Regent River King Sound (north) Yampi Sound Talbot Bay Walcott Inlet Doubtful Bay Deception Bay Augustus Island	Roebuck Bay Willie Creek Prince Regent River	No migration BIA identified within the NWMR
Spotted bottlenose dolphin	✓	✓	✓	No resting BIA identified within the NWMR	Roebuck Bay Cambridge Gulf Camden Sound area King Sound (south) King Sound (north) Yampi Sound	Roebuck Bay Cambridge Gulf Camden Sound area King Sound (south) King Sound (north) Yampi Sound	No calving BIA identified within the NWMR	No migration BIA identified within the NWMR

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Species	Woodside Activity Area			BIAs				
	Browse	NWS/S	NWC	Resting	Foraging	Breeding	Calving	Migration
Dugong ¹	✓	✓	✓	No resting BIA identified within the NWMR	Exmouth Gulf Ningaloo Reef Shark Bay Roebuck Bay Dampier Peninsula	No breeding BIA identified within the NWMR	Exmouth Gulf Ningaloo Reef Shark Bay	Not listed as a migratory species

¹ DSEWPAC (2012a)

² Commonwealth of Australia (2015a)

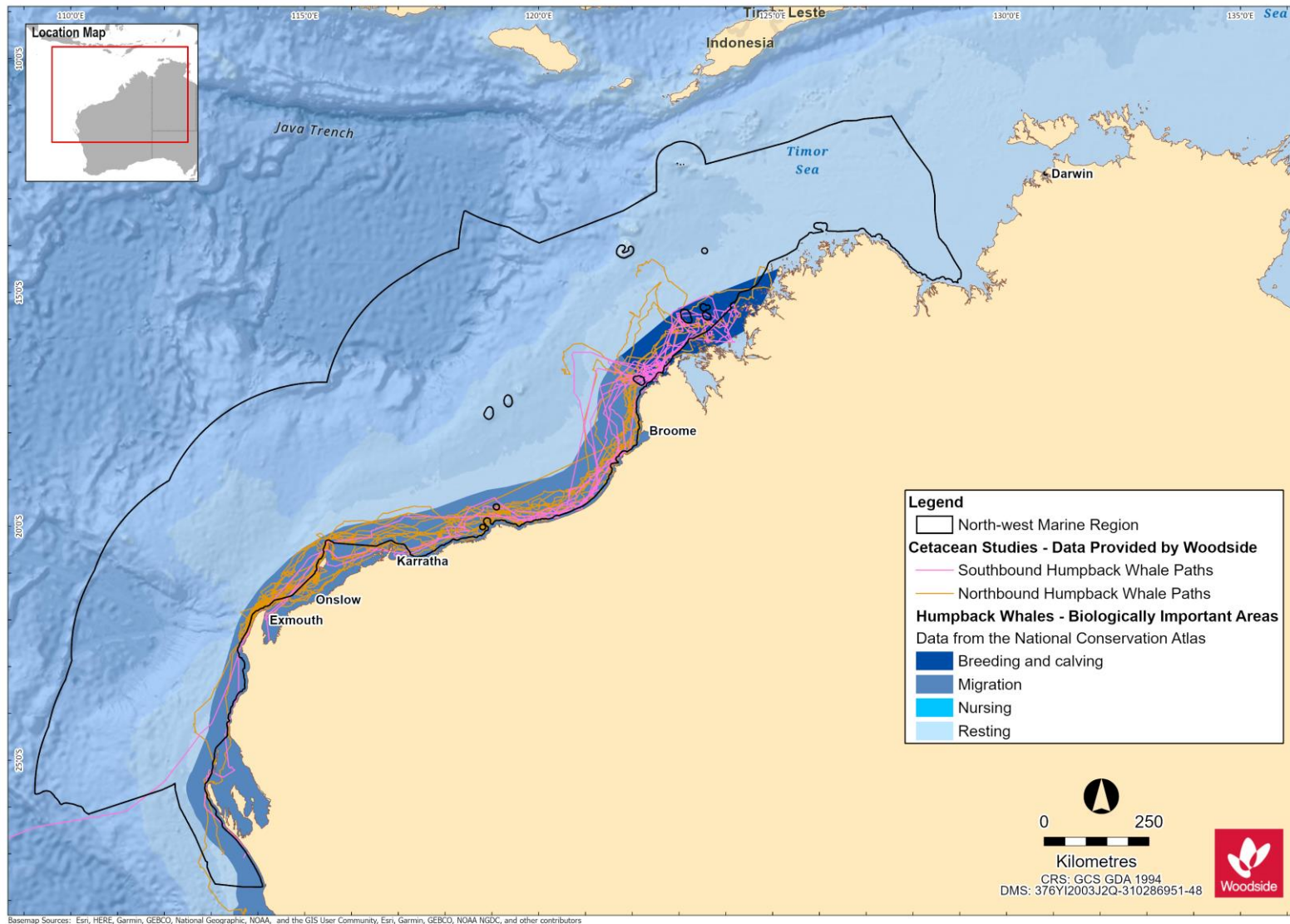


Figure 7-1 Humpback whale BIAs for the NWMR and tagged tracks for north and south bound migrations

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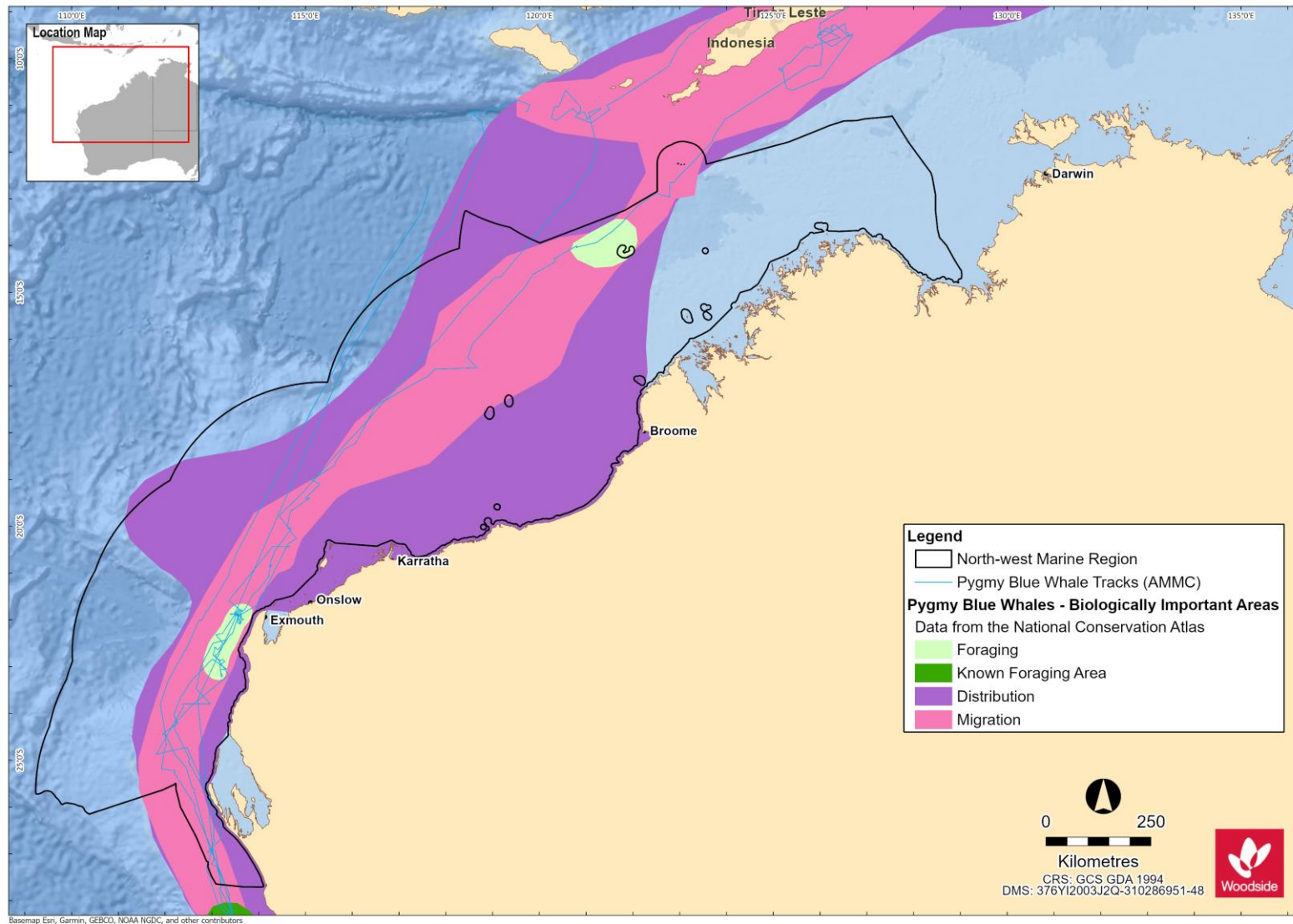


Figure 7-2 Pygmy blue whale BIAs for the NWMR and tagged whale tracks for northbound migration

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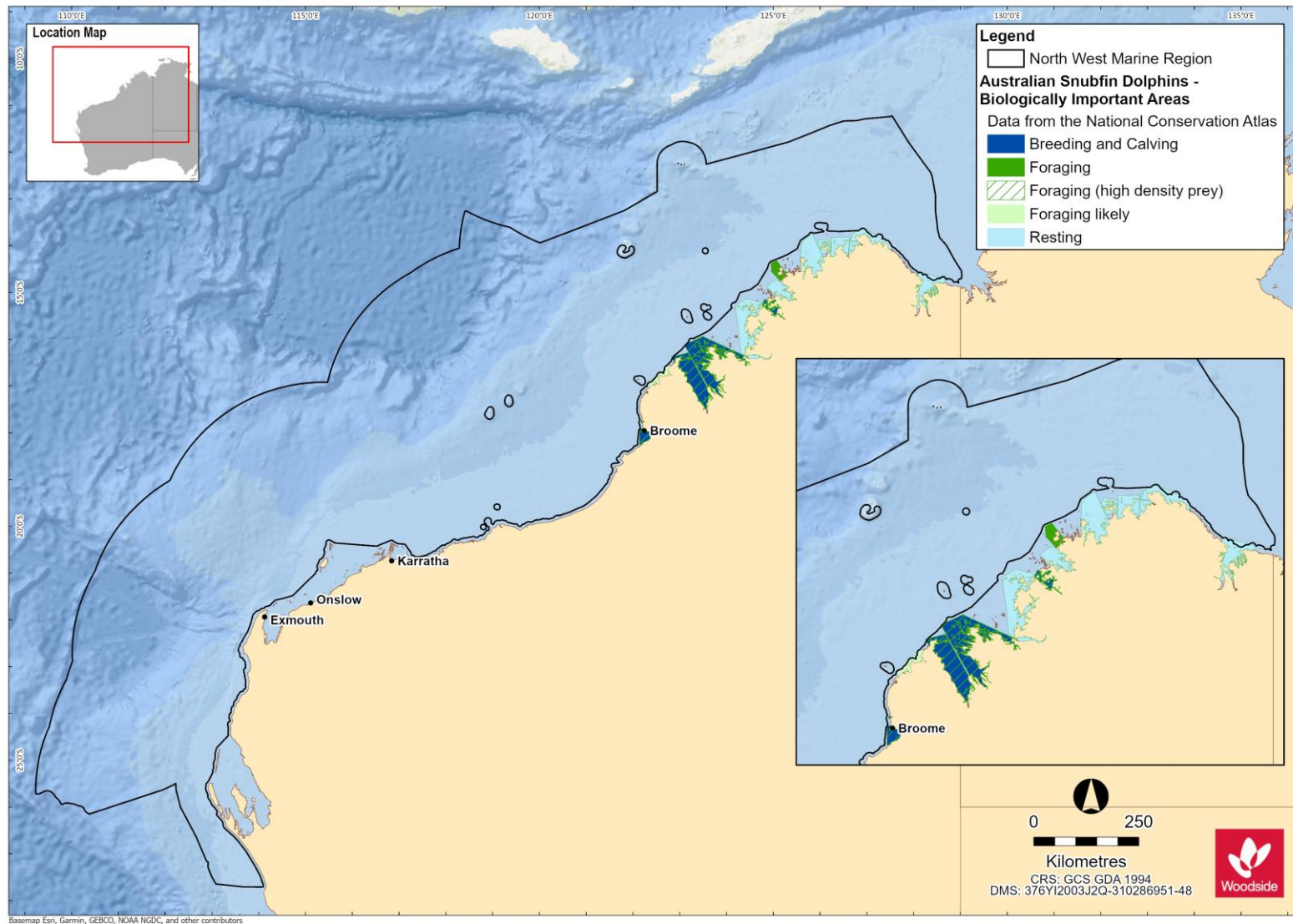


Figure 7-3 Australian snubfin dolphin BIAs for the NWMR

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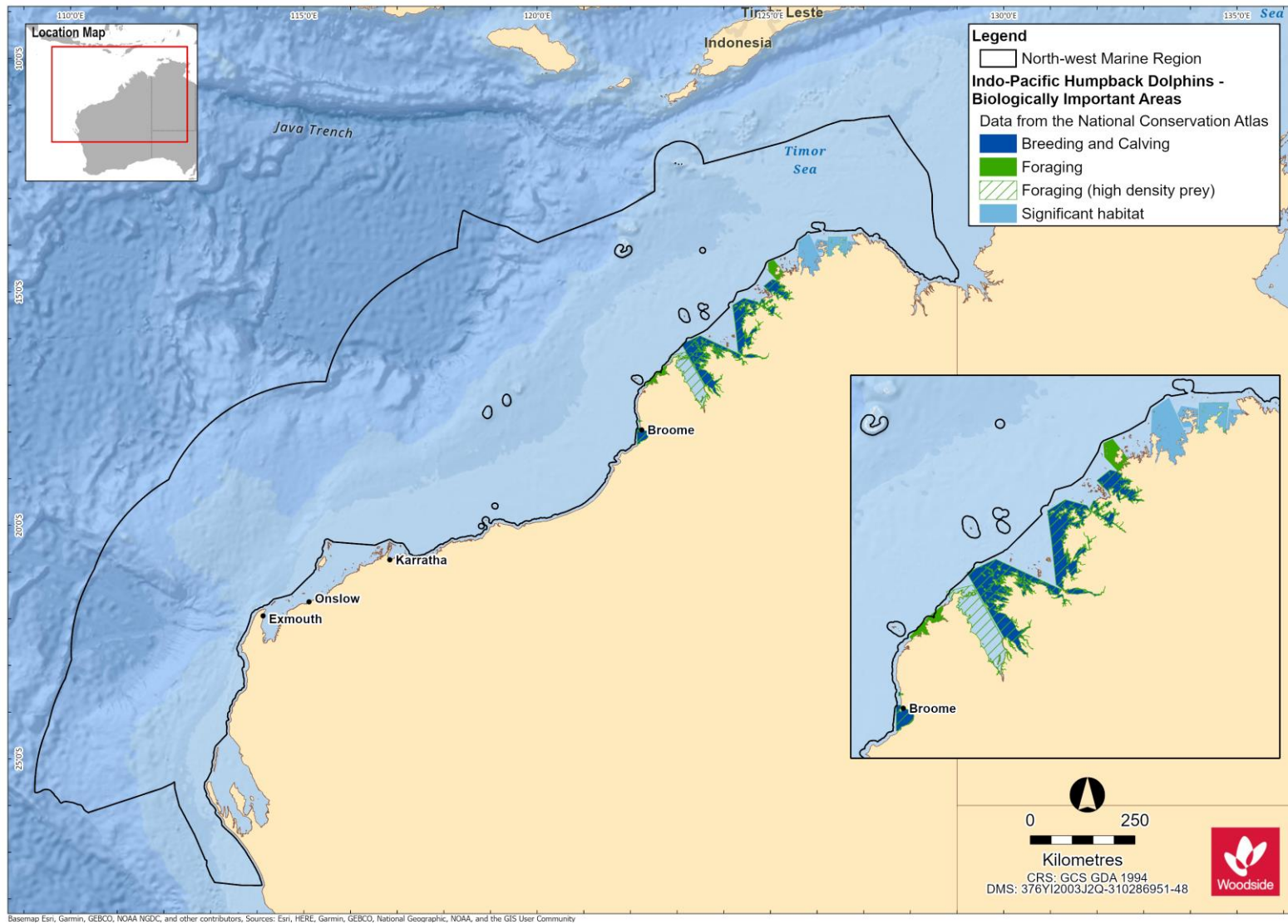


Figure 7-4 Indo-Pacific humpback dolphin BIAs for the NWMR

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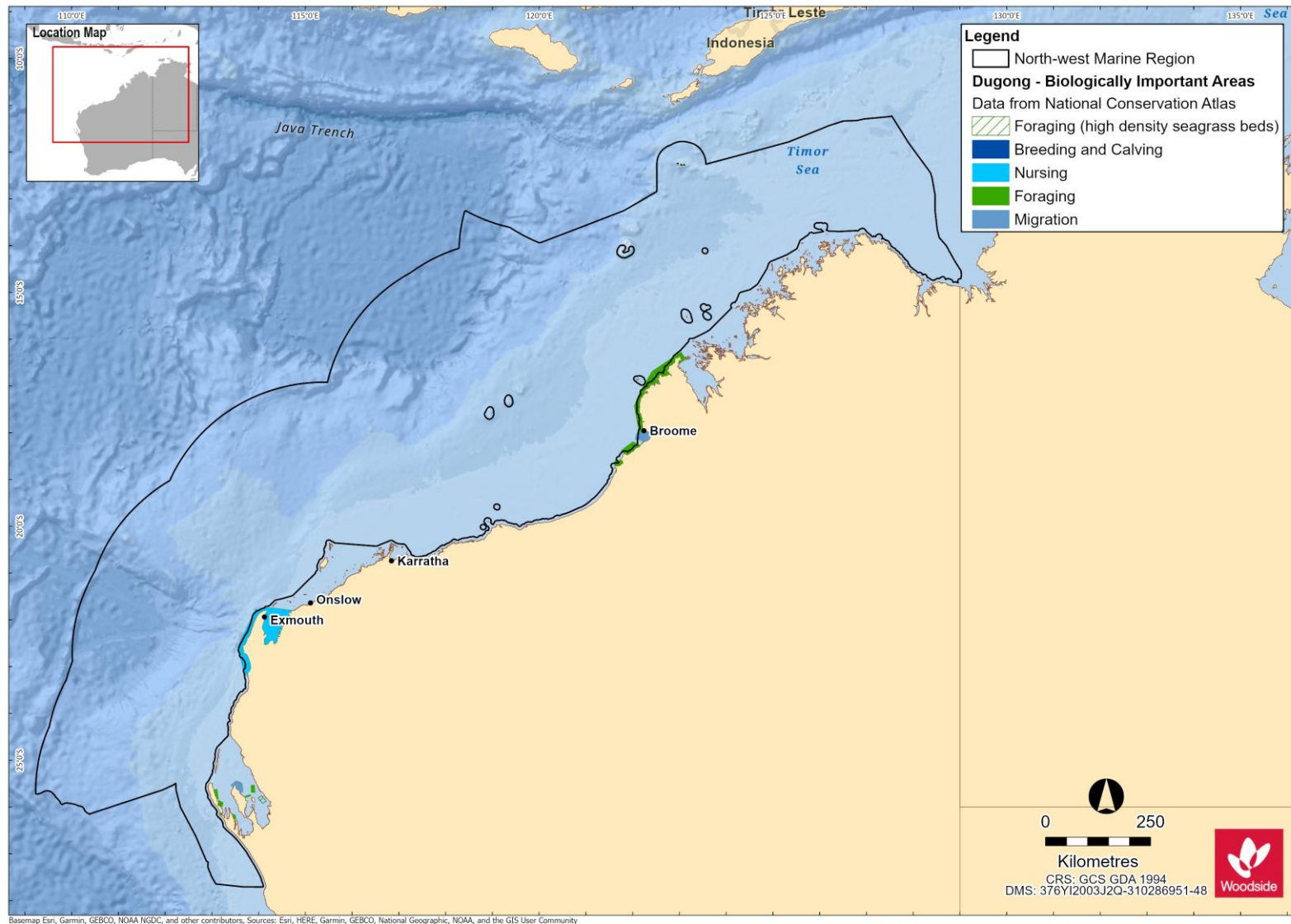


Figure 7-5 Dugong BIAs for the NWMR

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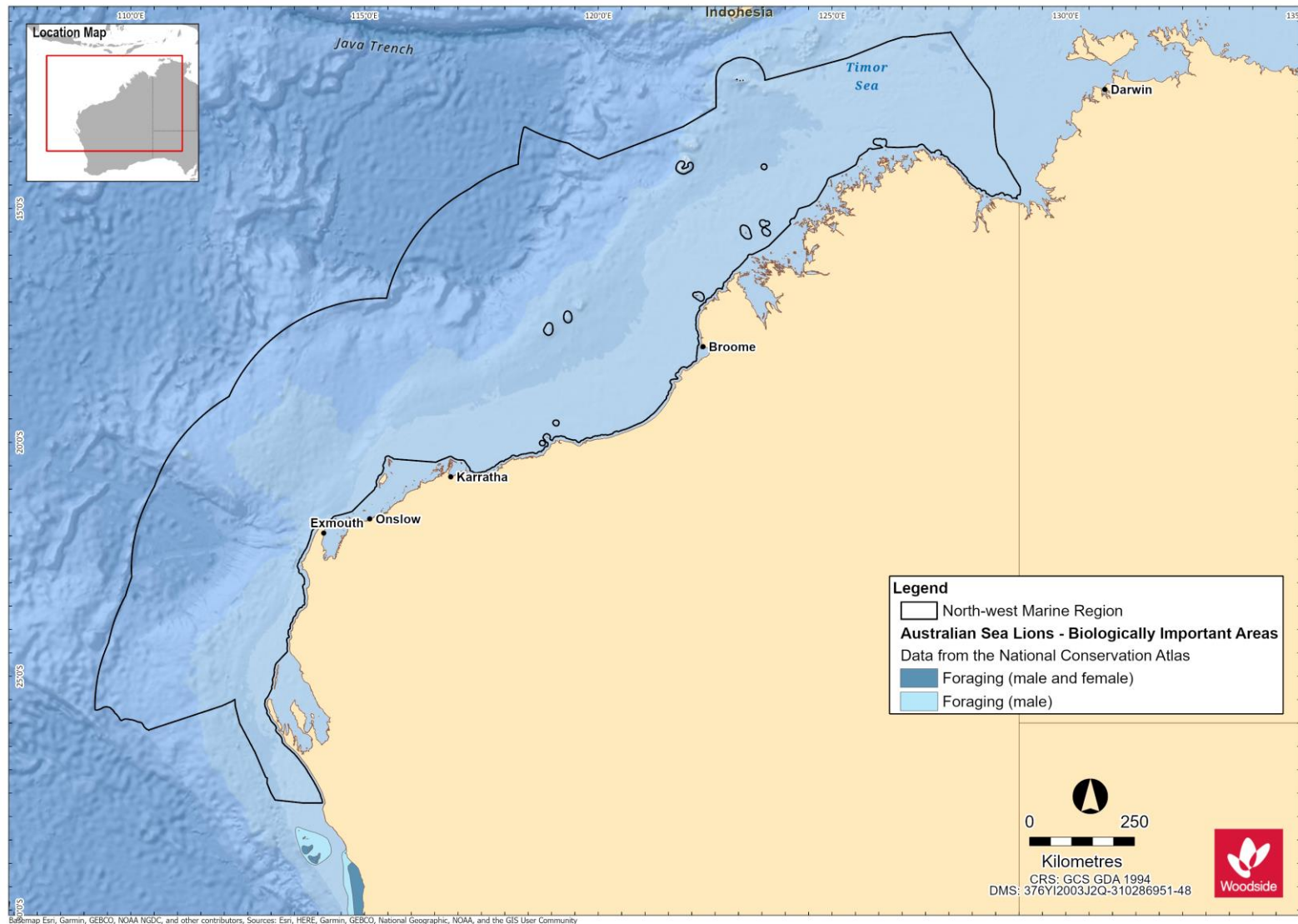


Figure 7-6 Australian sea lion BIAs in the northern extent of the SWMR closest to the NWMR

7.6 Marine Mammal Summary for the NWMR

7.6.1 Browse

The Browse activity area includes biologically important habitat for five threatened and/or migratory marine mammal species:

- blue whale and pygmy blue whale (foraging and migration areas);
- humpback whale (breeding, calving and migration areas);
- Indo-Pacific humpback dolphin (foraging, breeding and calving areas);
- Australian snubfin dolphin (foraging, breeding and calving areas); and
- dugong (foraging).

BIAs for the marine mammal species are outlined in **Table 7-3**.

7.6.2 North-west Shelf / Scarborough

The NWS / Scarborough activity area includes biologically important habitat for five threatened and/or migratory marine mammal species:

- blue whale and pygmy blue whale (foraging and migration areas);
- humpback whale (resting and migration areas);
- Indo-Pacific humpback dolphin (foraging, breeding and calving areas);
- Australian snubfin dolphin (foraging, breeding and calving areas); and
- dugong (foraging and calving areas).

BIAs for the marine mammal species are outlined in **Table 7-3**.

7.6.3 North-west Cape

The North-west Cape activity area includes biologically important habitat for three threatened and/or migratory marine mammal species:

- blue whale and pygmy blue whale (foraging and migration areas);
- humpback whale (resting and migration areas); and
- dugong (foraging and calving areas).

BIAs for the marine mammal species are outlined in **Table 7-3**.

8. SEABIRDS AND MIGRATORY SHOREBIRDS OF THE NWMR

8.1 Regional Context

The NWMR supports high numbers and species diversity of seabirds and migratory shorebirds including many that are EPBC Act listed, threatened and migratory. The NWMR marine bioregional plan reported 34 seabird species (listed as threatened, migratory and/or marine) that are known to occur, and 30 of 37 species of migratory shorebird species that regularly occur in Australia, are recorded at Ashmore Reef in the NWMR (DSEWPAC, 2012e). The NWMR marine bioregional plan also noted that Roebuck Bay and Eighty Mile Beach are internationally significant and recognised migratory shorebird locations.

Many migratory seabirds and shorebirds are protected through bilateral agreements between Australia and Japan (JAMBA), China (CAMBA) and the Republic of Korea (ROKAMBA), recognising the migratory route and important stopover and resting habitats of the East Asian-Australasian Flyway (EAAF). Important migratory bird habitats are also recognised as part of protected wetlands of the international significance under the Ramsar Convention. Important Bird Areas (IBAs) for the NWMR, which are also recognised as global Key Biodiversity Areas (KBAs) (BirdLife Australia⁴), include:

- Roebuck Bay KBA (and Ramsar site): Internationally significant migratory shorebird species.
- Mandora Marsh and Anna Plains KBA (adjacent to Eighty Mile Beach, Ramsar site): Internationally significant migratory shorebird species.
- Dampier Saltworks KBA: Internationally significant migratory shorebird species.
- Montebello Islands KBA: Shorebird and seabird species.
- Barrow Island KBA: Shorebird and seabird species.
- Exmouth Gulf Mangroves KBA: Internationally significant migratory shorebird species.

Table 8-1 presents a list of the threatened and migratory seabird and shorebird species that occur within the NWMR, with their conservation status and relevant recovery plans and/or conservation advice.

4

[https://www.birdlife.org.au/projects/KBA#:~:text=The%20Key%20Biodiversity%20Areas%20\(KBAs,of%20advocacy%20for%20protected%20areas.](https://www.birdlife.org.au/projects/KBA#:~:text=The%20Key%20Biodiversity%20Areas%20(KBAs,of%20advocacy%20for%20protected%20areas.)

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Table 8-1. Bird species (threatened/migratory) identified by the EPBC Act PMST and other sources of information as potentially occurring within the NWMR

Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999			WA Biodiversity Conservation Act 2016	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	
Seabirds						
<i>Macronectes giganteus</i>	Southern giant petrel	Endangered	Migratory	Marine	Migratory	National recovery plan for threatened albatrosses and giant petrels 2011-2016 (DSEWPAC, 2011c)
<i>Papasula abbotti</i>	Abbott's booby	Endangered	N/A	Marine	N/A	Conservation Advice for the Abbott's booby - <i>Papasula abbotti</i> (Threatened Species Scientific Committee, 2020b)
<i>Pterodroma mollis</i>	Soft-plumaged petrel	Vulnerable	N/A	Marine	N/A	Conservation Advice <i>Pterodroma mollis</i> soft-plumaged petrel (Threatened Species Scientific Committee, 2015f)
<i>Sternula nereis nereis</i>	Australian fairy tern	Vulnerable	N/A	N/A	Vulnerable	Conservation Advice for <i>Sternula nereis nereis</i> (Fairy Tern) (DSEWPAC, 2011d)
<i>Anous tenuirostris melanops</i>	Australian lesser noddy	Vulnerable	N/A	Marine	Endangered	Conservation Advice <i>Anous tenuirostris melanops</i> Australian lesser noddy (Threatened Species Scientific Committee, 2015e)
<i>Thalassarche carteri</i>	Indian yellow-nosed albatross	Vulnerable	Migratory	Marine	Endangered	National recovery plan for threatened albatrosses and giant petrels 2011-2016 (DSEWPAC, 2011c)
<i>Anous stolidus</i>	Common noddy	N/A	Migratory	Marine	Migratory	Draft Wildlife Conservation Plan for Seabirds (Commonwealth of Australia, 2019)
<i>Fregata ariel</i>	Lesser frigatebird	N/A	Migratory	Marine	Migratory	
<i>Fregata minor</i>	Great frigatebird	N/A	Migratory	Marine	Migratory	
<i>Sula leucogaster</i>	Brown booby	N/A	Migratory	Marine	Migratory	
<i>Sula sula</i>	Red-footed booby	N/A	Migratory	Marine	Migratory	

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Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999			WA Biodiversity Conservation Act 2016	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	
<i>Onychoprion anaethetus</i> (listed as <i>Sterna anaethetus</i>)	Bridled tern	N/A	Migratory	Marine	Migratory	
<i>Thalasseus bergii</i>	Greater crested tern	N/A	Migratory	Marine	Migratory	
<i>Sternula albifrons</i>	Little tern	N/A	Migratory	Marine	Migratory	
<i>Sterna dougallii</i>	Roseate tern	N/A	Migratory	Marine	Migratory	
<i>Onychoprion fuscata</i>	Sooty tern	N/A	N/A	Marine	N/A	
<i>Hydroprogne caspia</i>	Caspian tern	N/A	Migratory	Marine	Migratory	
<i>Ardena pacifica</i>	Wedge-tailed shearwater	N/A	Migratory	Marine	Migratory	
<i>Puffinus assimillis</i>	Little shearwater	N/A	N/A	Marine	N/A	
<i>Ardena carneipes</i>	Flesh-footed shearwater	N/A	Migratory	Marine	Vulnerable	
<i>Calonectris leucomelas</i>	Streaked shearwater	N/A	Migratory	Marine	Migratory	
<i>Phaethon lepturus</i>	White-tailed tropicbird	N/A	Migratory	Marine	Migratory	
<i>Chroicocephalus novaehollandiae</i>	Silver gull	N/A	N/A	Marine	N/A	
Migratory shorebirds						
<i>Numenius madagascariensis</i>	Eastern curlew, Far Eastern curlew	Critically endangered	Migratory	Marine	Critically endangered	Conservation Advice <i>Numenius madagascariensis</i> eastern curlew (DOE, 2015a)
<i>Calidris ferruginea</i>	Curlew sandpiper	Critically endangered	Migratory	Marine	Critically endangered	Conservation Advice <i>Calidris ferruginea</i> curlew sandpiper (DOE, 2015b)
<i>Calidris tenuirostris</i>	Great knot	Critically endangered	Migratory	Marine	Critically endangered	Conservation Advice <i>Calidris tenuirostris</i> Great knot (Threatened Species Scientific Committee, 2016a)
<i>Limosa lapponica menzbieri</i>	Bar-tailed godwit (<i>menzbieri</i>)	Critically endangered	Migratory	Marine	Critically endangered	Conservation Advice <i>Limosa lapponica menzbieri</i> Bar-tailed godwit (northern Siberia). (Threatened Species Scientific Committee, 2016c)

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Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999			WA Biodiversity Conservation Act 2016	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	
<i>Calidris canutus</i>	Red knot	Endangered	Migratory	Marine	Endangered	Conservation Advice <i>Calidris canutus</i> Red knot (Threatened Species Scientific Committee, 2016b)
<i>Charadrius mongolus</i>	Lesser sand plover	Endangered	Migratory	Marine	Endangered	Conservation Advice <i>Charadrius mongolus</i> Lesser sand plover (Threatened Species Scientific Committee, 2016e)
<i>Charadrius leschenaultii</i>	Greater sand plover	Vulnerable	Migratory	Marine	Vulnerable	Conservation Advice <i>Charadrius leschenaultia</i> Greater sand plover (Threatened Species Scientific Committee, 2016d)
All migratory shorebird species	Wildlife Conservation Plan for Migratory Shorebirds (Commonwealth of Australia, 2015c).					

8.2 Seabirds in the NWMR

Seabirds are birds that are adapted to life within the marine environment (oceanic and coastal) and are generally long-lived, have delayed breeding and have fewer young than other bird species (Commonwealth of Australia, 2019). At least 34 seabird species listed as threatened, migratory and/or marine under the EPBC Act are known to occur regularly in the NWMR and include a variety of species of terns, noddies, petrels, shearwaters, frigatebirds, and boobies. Many of these species spend most of their lives at sea (predominately pelagic species), ranging over large distances to forage. These pelagic species only come onshore to breed and raise chicks at natal or high-fidelity breeding colonies on remote, offshore island locations in and adjacent to the NWMR. Many species are ecologically significant to the NWMR, as they are endemic to the region, can be present in large numbers in breeding seasons and non-breeding seasons, and many exhibit extensive annual migrations that include marine areas outside the Australian EEZ (DSEWPAC, 2012e).

The presence of seabirds within the NWMR is influenced by seabird species that migrate and forage in the area during the non-breeding season and this includes many seabird species that breed on the Houtman Abrolhos in the SWMR. Pelagic seabirds have been documented foraging at current boundaries and seasonal upwellings within the NWMR (refer to Sutton *et al.*, 2019). The Houtman Abrolhos Islands National Park located in the SWMR, is one of the most significant seabird breeding locations in the eastern Indian Ocean. Sixteen (16) species of seabirds breed there. Eighty percent of common (brown) noddies, 40% of sooty terns and all the lesser noddies found in Australia nest at the Houtman Abrolhos (Surman, 2019). Important seabird areas in the NWMR are as identified by the KBAs (refer to **Section 8.1**) and the information on a select number of seabird species documented for the NWMR (based on the screening criteria presented in **Section 3**), as presented in **Table 8-2**.

Table 8-2 Information on threatened/migratory seabird species of the NWMR

Species	Key Information
Seabirds	
Southern giant petrel	This species is included in the National recovery plan for threatened albatrosses and giant petrels. Habitat critical to survival is defined for breeding and foraging. There are six known breeding localities under Australian jurisdiction (for all species giant petrels) and all are located in the Southern Ocean including islands off Tasmania and within the Australian Antarctic Territory (DSEWPAC, 2011c). Habitat critical to survival identified for foraging is defined as waters south of 25 degrees latitude. The giant petrel species distribution is mainly within the Southern Ocean but this species does migrate into subtropical waters during the winter and its distribution includes the southern extent of the NWMR. No BIAs for this species are located in the NWMR.
Abbott's booby	The Abbott's booby is a large, long-lived seabird known to nest only at Christmas Island. The recovery of this species is strongly dependent on the protection of breeding habitat defined habitat critical to the survival of this species on Christmas Island (Threatened Species Scientific Committee, 2020b). This species spends much of its time at sea and known to forage over large distances offshore when nesting and its range includes off the coast of Java, near the Chagos and in the Banda Sea, and may possibly extend into the north-western extent of the NWMR. No BIAs for this species are located in the NWMR.
Soft-plumaged petrel	This petrel species breeds only at two locations in Australian waters within the Southern Ocean (one off Tasmania and Macquarie Island) (Threatened Species Scientific Committee, 2015f). As a mainly sub-Antarctic species they are usually distributed in cooler seas but distribution extends into subtropical waters and its known distribution includes the southern extent of the NWMR. No BIAs for this species are located in the NWMR.
Australian fairy tern	The Australian fairy tern is listed as Vulnerable for the sub-species only recorded for WA. It has a coastal distribution from Sydney, south to Tasmania and around southern WA up to the Dampier Archipelago and out on the offshore island groups of Barrow, Montebello and the Lowendals (DSEWPAC, 2011d). The Australian fairy tern feeds on small baitfish and roosts and nests on sandy beaches below vegetation. These behaviours, generally, occur in inshore waters of island archipelagos and on the Australian mainland shores and adjacent wetlands. Fairy terns breed from August to February. The Australian fairy tern is unlikely to be present
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Species	Key Information
	within the offshore environment of the NWMR. The largest breeding colony in Western Australia for this species is in the Houtman Abrolhos Islands, SWMR (Surman, 2019). For the description and location of BIAs in the NWMR, refer to Table 8-3 and Figure 8-2 .
Australian lesser noddy	The Houtman Abrolhos, WA is an important breeding habitat for the Australian lesser noddy in the eastern Indian Ocean. This species exhibits nesting habitat specialisation (white mangrove stands) and has a limited foraging range during the breeding season. Furthermore, the lesser noddy forages over shelf waters and appears not to disperse over their non-breeding period as they remain largely in the general vicinity or slightly to the south of the colony in the non-breeding season (February to September; Surman <i>et al.</i> , 2018). No BIAs for this species are located in the NWMR.
Indian yellow-nosed albatross	This species is included in the National recovery plan for threatened albatrosses and giant petrels. Habitat critical to survival is defined for breeding and foraging. There are six known breeding localities under Australian jurisdiction (for all species of albatrosses) and all are located in the Southern Ocean including islands off Tasmania and within the Australian Antarctic Territory (DSEWPAC, 2011c). Habitat critical to survival identified for foraging is defined as waters south of 25 degrees latitude. All albatross species distribution (including the Indian yellow-nose albatross) is mainly within the Southern Ocean but this species does migrate into subtropical waters during the winter and its distribution includes the southern extent of the NWMR. No BIAs for this species are located in the NWMR.
Common noddy	This species is listed as migratory and marine. The common (or brown) noddy is the largest species of noddy found in Australian waters. The species is widespread in tropical and subtropical areas beyond Australia. This seabird species is gregarious and normally occurs in flocks, up to hundreds of individuals, when feeding or roosting. The Houtman Abrolhos, WA is the primary breeding habitat for the common noddy in the Eastern Indian Ocean. This species spends their non-breeding season (March to August) in the NWS area, around 950 km north from the breeding colony (Surman <i>et al.</i> 2018). The species occurs within NWMR waters, particularly around offshore islands such as the Montebello Island group. This species is recorded on unmanned oil and gas platforms within the NWS. No BIAs for this species are located in the NWMR.
Lesser frigatebird Great frigatebird	Both species of frigatebird are listed as migratory and marine. Within the NWMR, the lesser frigatebird is known to breed on Adele, Bedout and West Lacepede islands, Ashmore Reef and Cartier Island (Commonwealth of Australia, 2019). The lesser frigatebird feeds mostly on fish and sometimes cephalopods, and all food is taken while the bird is in flight. Lesser frigatebirds generally forage close to breeding colonies. Breeding/foraging BIAs for the lesser frigatebird are located in the NWMR; refer to Table 8-3 .
Brown booby	The brown booby is the most common booby, occurring throughout all tropical oceans bounded by latitudes 30° N and 30° S. There are large colonies on offshore islands within the NWMR such as the Lacepede Islands (one of the largest colonies in the world), Ashmore Reef, and other offshore Kimberley islands. This seabird species is a specialised plunge diver, mostly eating fish and some cephalopods (Commonwealth of Australia, 2019). Breeding/foraging BIAs for the brown booby are located in the NWMR; refer to Table 8-3 and Figure 8-3 .
Red-footed booby	Within the NWMR, its known breeding sites for this species include Ashmore Reef and Cartier Island. It is a pelagic species and generally occurs away from land. It mainly eats flying fish and squid. Prey abundance is reliant on the high productivity in slope areas off remote islands where the birds breed (Commonwealth of Australia, 2019). Breeding/foraging BIAs for the red-footed booby are located in the NWMR; refer to Table 8-3 and Figure 8-3 .
Greater crested tern	The greater crested tern has a widespread distribution recorded on islands and coastlines of tropical and subtropical areas, ranging from the Atlantic coast of South Africa, Indian Ocean and through south-east Asia and Australia. Outside the breeding season it can be found at sea throughout its range, with the exception of the central Indian Ocean (Commonwealth of Australia, 2019). The largest breeding colony in WA for this species is the Houtman Abrolhos Islands, SWMR (Surman, 2019). No BIAs for this species are located in the NWMR.
Little tern	There are three sub-populations of this species in Australia and two of these occur in the NWMR: northern Australian breeding sub-population occurring around Broome and extending across in to the NMR, and an east Asian breeding sub-population, with the terns present from Shark Bay to south-eastern Queensland during the austral summer. Little terns

Species	Key Information
	usually forage close to breeding colonies in the shallow water of estuaries (Commonwealth of Australia, 2019). For the description and location of BIAs in the NWMR, refer to Table 8-3 and Figure 8-2 .
Roseate tern	This species is generally tropical in distribution and there are many breeding populations in the NWMR, including Ashmore Reef, Napier Broome Bay, Bonaparte Archipelago, Lacepede Islands, Dampier Archipelago and the Lowendal Islands. A large number of non-breeding roseate terns have been observed at several remote locations in the Kimberley and there are high numbers also recorded for Eighty Mile Beach Ramsar site. The Kimberley colonies are likely to be another sub-species that breeds in east Asia. Roseate terns predominately eat small pelagic fish (Commonwealth of Australia, 2019). The largest breeding colony in Western Australia for this species is in the Houtman Abrolhos Islands, SWMR (Surman, 2019). For the description and location of BIAs in the NWMR, refer to Table 8-3 and Figure 8-2 .
Wedge-tailed shearwater	The wedge-tailed shearwater is a pelagic, marine seabird known from tropical and subtropical waters. Its distribution is widespread across the Indian and Pacific oceans. It is known to breed on the east and west coasts (and offshore islands) of Australia. This species is known to consume fish, cephalopods, and other biota primarily via contact-dipping. Wedge-tailed shearwaters are now understood to undertake extensive foraging trips (over thousands of kilometres over periods of days when chicking and provisioning young) and much longer and extensive pelagic travels over the north-west Indian Ocean during the non-breeding season, targeting current boundaries and upwellings. The species breeds throughout its range, mainly on vegetated islands, atolls and cays and excavates burrows in the ground where chicks are raised (Commonwealth of Australia, 2019). Large breeding colonies of the wedge-tailed shearwater are located on the Houtman Abrolhos islands (SWMR) (Surman <i>et al.</i> , 2018) and several locations in the NWMR including: Muiron Islands (North-west Cape), Varanus Island and the Dampier Archipelago in the Pilbara where burrow numbers were estimated to several hundred thousand to half a million such as on the Muiron Islands, though it is not known if all burrows are utilised on an annual basis (Birdlife Australia, 2018; Surman <i>et al.</i> , 2018). Cannell <i>et al.</i> (2019) satellite tracked adult wedge-tailed shearwaters during egg incubation and chick rearing on the Muiron Islands in January 2018. For the incubation trips, there was a strong consistency for the birds to travel towards seamounts, typically located north-west of the Muiron Islands, between Australia and Indonesia. One bird however remained south-west of the islands, in the Cape Range Canyon. A similar pattern to utilise areas associated with sea mounts was also observed for the long foraging trips during chick rearing, though some of the foraging was concentrated in deeper waters. A bimodal foraging strategy during chick-rearing was observed, with adults undertaking long foraging trips after a series of shorter foraging trips within the NWMR. Surman <i>et al.</i> (2018) reported most wedge-tailed shearwaters from the breeding colonies on the Houtman Abrolhos undertook extensive non-breeding migrations. This seabird species occupied waters adjacent or to the north of their nesting sites or migrated 4200 km north-west into the equatorial central Indian Ocean near the Ninety East Ridge during the non-breeding season (later April to mid-November). For the description and location of BIAs in the NWMR, refer to Table 8-3 and Figure 8-1 .
Flesh-footed shearwater	The species mainly occurs in the subtropics, over continental shelves and slopes and occasionally inshore waters, with individual birds pass through the tropics and over deeper waters during migration to the North Pacific and Indian oceans (Commonwealth of Australia, 2019). They are a common visitor to the waters off southern Australia, from south-western WA to south-eastern Queensland. The fleshy-footed shearwater is a trans-equatorial migrant, breeding from late September to May off south-western Australia, and migrating north by early May, across the southern Indian and possibly Indonesia to the northern Pacific Ocean. No BIAs for the flesh-footed shearwater are located in the NWMR.
Streaked shearwater	The streaked shearwater has a broad distribution in the western Pacific Ocean, breeding on the coast and offshore islands of Japan, Russia, China and the Korean Peninsula. During winter months (non-breeding season), the species undertakes trans-equatorial migration to the coasts of Vietnam, New Guinea, the Philippines, Australia, southern India and Sri Lanka. The streaked shearwater feeds mainly on fish and squid that it catches by surface-seizing and shallow plunges (Commonwealth of Australia, 2019). No BIAs for the streaked shearwater are located in the NWMR.
White-tailed tropicbird	Tropicbirds are predominately pelagic species and the white-tailed tropicbird forages in warm waters and over long distances (pan-tropical). The species is most common off north-west Australia. In the NWMR, this species is considered a sub-species and are limited in number and distribution. Nesting sites are known for Clerke Reef (Rowley Shoals) and Ashmore

Species	Key Information
	Reef. Christmas Island is also a known nesting site and the species can disperse several thousand kilometres during foraging trips. This species feeds mainly on fish and cephalopods, captured by deep plunge diving (Commonwealth of Australia, 2019). There are breeding BIAs at the Rowley Shoals and Ashmore Reef within the NWMR for the white-tailed tropicbird; refer to Table 8-3 .
Silver gull	The silver gull is typically described as an inshore and coastal foraging seabird and has an Australian-wide distribution including locations within the NWMR. It is noted as it has been recorded on unmanned oil and gas platforms located within the NWS.

8.2.1 Biologically Important Areas in the NWMR

BIAs representing important life cycle stages and behaviours for eight species of seabird in the NWMR are presented in **Table 8-3**.

Table 8-3 Seabird BIAs within the NWMR

Seabird Species	Woodside Activity Area			BIAs			
	Browse	NWS/S	NWC	Breeding/foraging	Foraging	Breeding	Resting
Australia fairy tern	-	✓	✓	-	No foraging BIAs in the NWMR Foraging in high numbers: the BIA is located in the SWMR including the Houtman Abrolhos Islands	Dampier Archipelago, Montebello, Lowendal and Barrow Island Groups, south Ningaloo and barrier island of Shark Bay	-
Wedge-tailed shearwater	✓	✓	✓	Widespread area of the NWMR offshore and inshore waters	Foraging in high numbers: the BIA is located in the SWMR including the Houtman Abrolhos Islands	-	-
Great frigatebird	✓	-	-	Ashmore Reef, Adele Island	-	-	-
Lesser frigatebird	✓	✓	-	Off Eighty Mile Beach, Lacepedes, Adele Island, North Kimberley and Ashmore Reef	-	-	-
Brown booby	✓	✓	-	Off Eighty Mile Beach, Lacepedes, Adele Island, North Kimberley and Ashmore Reef	-	-	-
Red-footed booby	✓	-	-	Adele Island, Ashmore Reef	-	-	-
Little tern	✓	✓	-	Rowley Shoals, Adele Island	-	-	-
Roseate tern	✓	✓	✓	-	No foraging BIAs in the NWMR Foraging (provisioning young) and foraging BIAs located in the SWMR – Houtman Abrolhos Islands the	Dampier Archipelago, Montebello, Lowendal and Barrow Island Groups, south Ningaloo and barrier island of Shark Bay	Eighty Mile Beach

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Seabird Species	Woodside Activity Area			BIAs			
	Browse	NWS/S	NWC	Breeding/foraging	Foraging	Breeding	Resting
					nearest BIA to the NWMR		
White-tailed tropicbird	✓	-	-			Rowley Shoals Ashmore Reef	

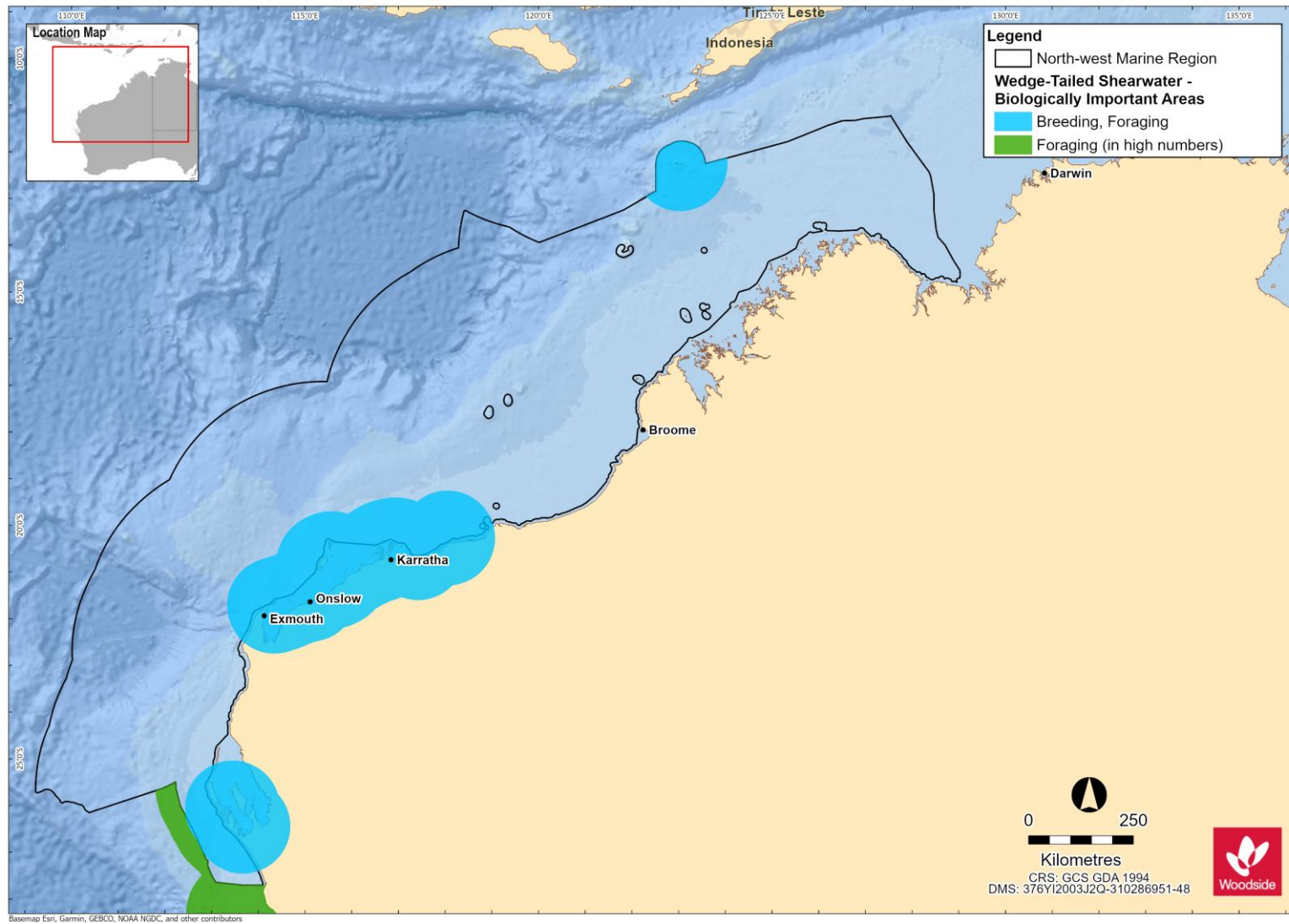


Figure 8-1 Wedge-tailed shearwater BIAs for the NWMR

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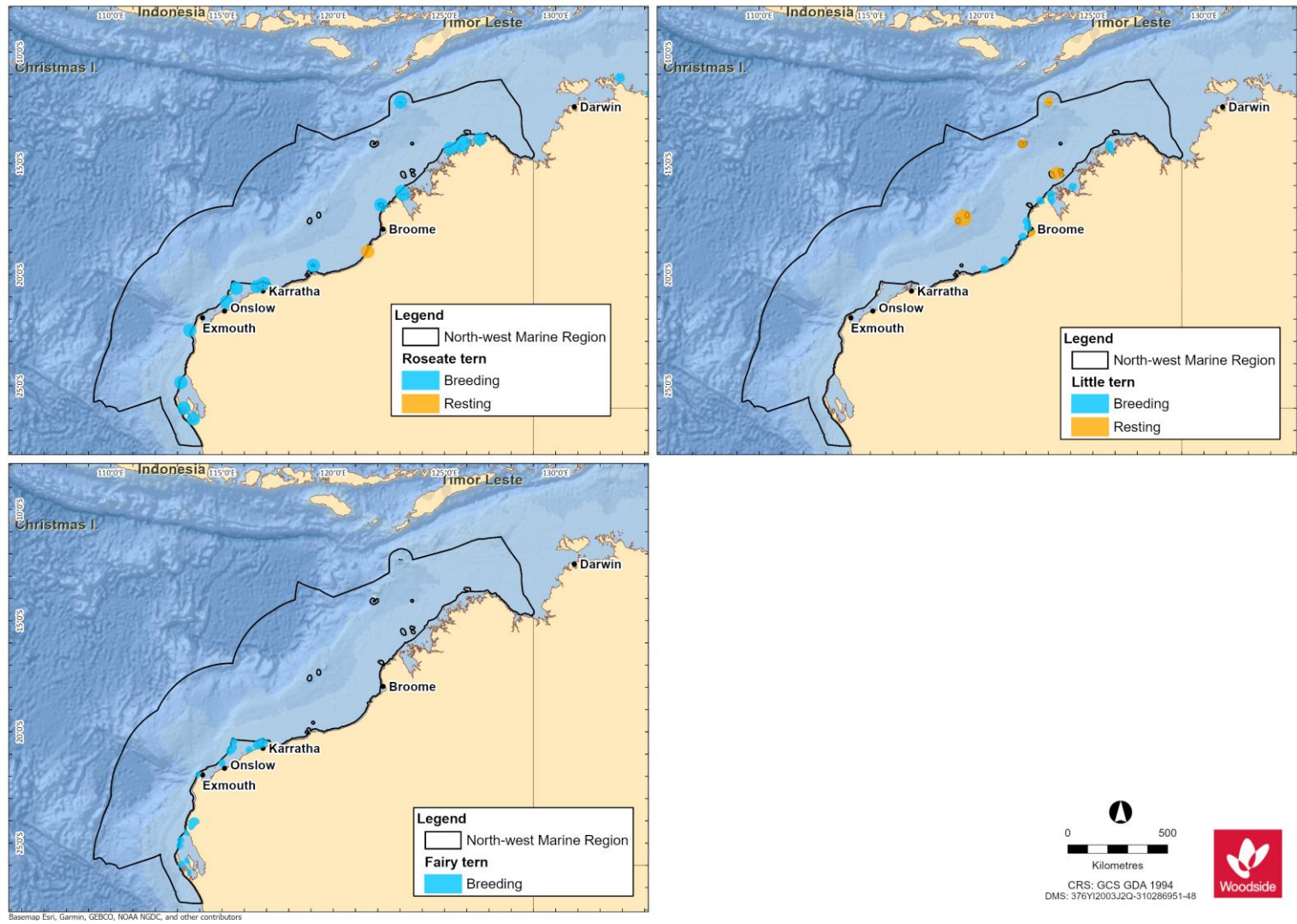


Figure 8-2 Tern species BIAs for the NWMR

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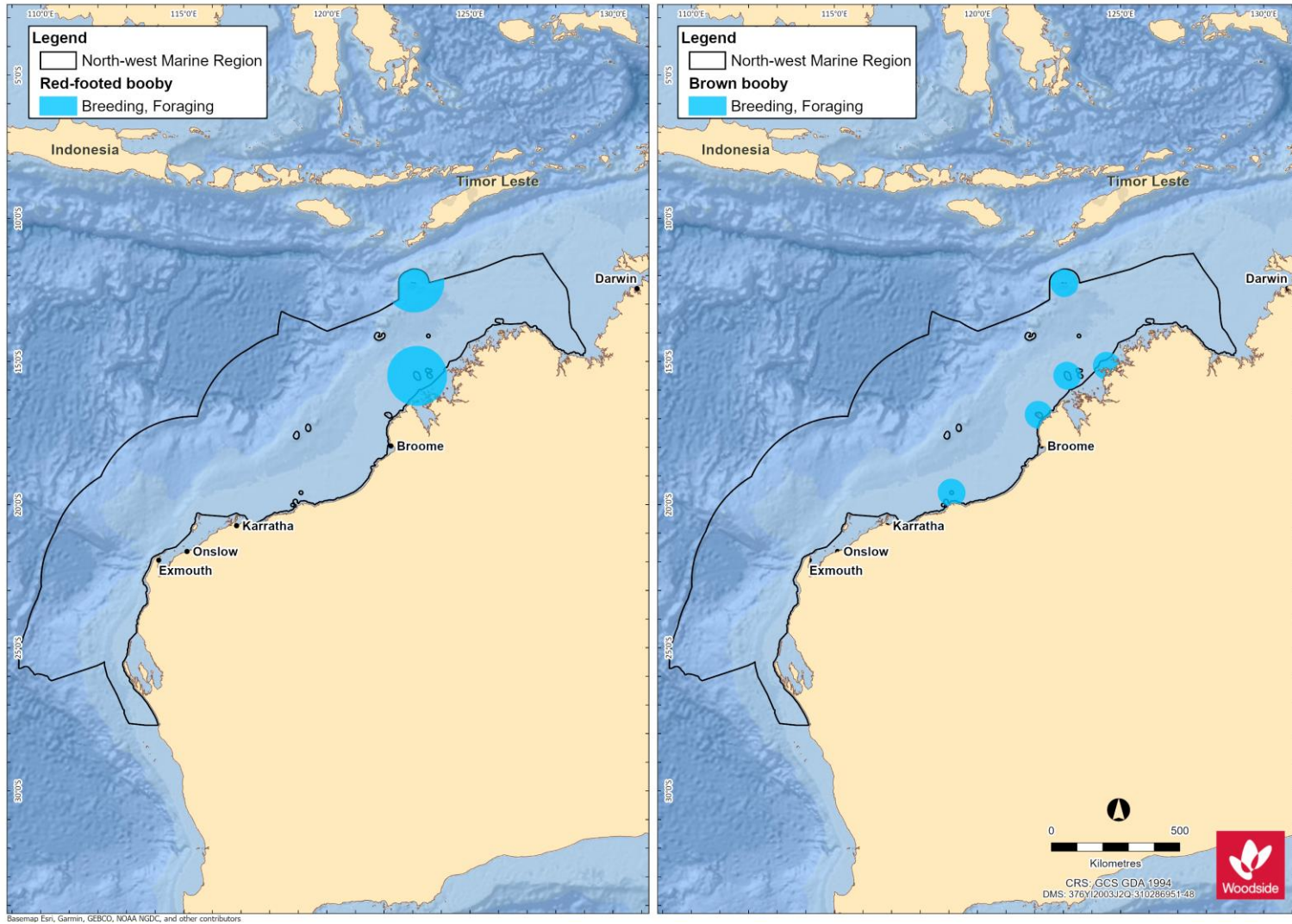


Figure 8-3 Red-footed and brown booby BIAs for the NWMR

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8.2.2 Seabird Summary for NWMR

8.2.2.1 Browse

The Browse activity area includes biologically important habitat for seven threatened and/or migratory seabird species:

- wedge-tailed shearwater (breeding/foraging);
- great and lesser frigatebirds (breeding/foraging);
- brown booby (breeding/foraging);
- red-footed booby (breeding/foraging);
- little tern (breeding/foraging);
- roseate tern (breeding and resting); and,
- white-tailed tropicbird (breeding).

BIAs for the seabird species are outlined in **Table 8-3**.

8.2.2.2 NWS / Scarborough

The NWS / Scarborough activity area includes biologically important habitat for five threatened and/or migratory seabird species:

- wedge-tailed shearwater (breeding/foraging);
- lesser frigatebird (breeding/foraging);
- brown booby (breeding/foraging);
- little tern (breeding/foraging); and
- roseate tern (breeding and resting).

BIAs for the seabird species are outlined in **Table 8-3**.

8.2.2.3 North-west Cape

The North-west Cape activity area includes biologically important habitat for five threatened and/or migratory seabird species:

- Australian fairy tern (breeding);
- wedge-tailed shearwater (breeding/foraging); and
- roseate tern (breeding and resting).

BIAs for the seabird species are outlined in **Table 8-3**.

8.3 Shorebirds

Shorebirds (migratory and resident species) are generally associated with wetland or coastal environments, and the NWMR hosts a large number of many shorebird species, particularly in the Austral summer (refer to **Appendix A** for the EPBC Act PMST reports on listed species of shorebirds). Shorebirds may use coastal environments for feeding, nesting or migratory stopovers. In coastal environments, shorebirds generally feed during low tide on exposed intertidal mud and sand flats, and roost in suitable habitat above the high water mark. Many shorebird species undergo annual migrations, typically breeding at high latitudes of the Northern Hemisphere and migrating south for the non-breeding season and Australia is part of the East Asian-Australasian Flyway (EAAF). The EAAF extends from breeding grounds in the Russian tundra, Mongolia and Alaska

southwards through east and south-east Asia, to non-breeding areas of Indonesia, Papua New Guinea, Australia and New Zealand (Weller and Lee, 2017). The EAAF is of most relevance to the NWMR. There are 37 species of shorebird which annually migrate to Australia via the EAAF and 36 of these species spend the austral summer (non-breeding season) foraging and roosting in coastal and wetland habitats (Commonwealth of Australia, 2015c; Weller and Lee, 2017).

Ashmore Reef is documented as a BIA for migratory shorebirds in the NWMR (DSEWPAC, 2012a).

Table 8-4. Information on threatened/migratory shorebird species of the NWMR

Species	Key Information
Shorebirds	
Eastern curlew, Far eastern curlew	This species is the largest, migratory shorebird in the world, with a long neck, long legs and a very long downcurved bill and is a long-haul flyer. The eastern curlew is a coastal species with a continuous distribution north from Barrow Island to the Kimberley region. The species is endemic to the EAAF and is a non-breeding visitor to Australia from August to March, primarily foraging on crabs and molluscs in intertidal mudflats. During the non-breeding season in Australia, this species is most associated with sheltered coasts, especially estuaries, bays, harbours, inlets and coastal lagoons, with large intertidal mudflats or sandflats, often with beds of seagrass (DOE, 2015a).
Curlew sandpiper	The curlew sandpiper breeds in northern Siberia but has a non-breeding range that extends from western Africa to Australia, with small numbers reaching New Zealand (Bamford <i>et al.</i> , 2008). In Australia, curlew sandpipers occur around the coasts and are also quite widespread inland, though in smaller numbers. Records occur in all states and the NT during the non-breeding period, and also during the breeding season when many non-breeding one-year old birds remain in Australia rather than migrating north along the EAAF. The species preferred habitat for foraging is mudflats and nearby shallow waters in sheltered coastal areas such as estuaries, bay, inlets and lagoons (DOE, 2015b).
Great knot	The great knot breeds in the Northern Hemisphere and undertakes biannual migrations along the EAAF to non-breeding habitat in Australia. The great knot winters in Australia and has been recorded around the entirety of the Australian coast the greatest numbers are found in northern Western Australia (Pilbara (Dampier Archipelago) and Kimberley and the Northern Territory. In Australia, this species prefers sheltered, coastal habitat with large intertidal mudflats or sandflats (inkling inlets, bays, harbours, estuaries and lagoons). High numbers (exceeding several thousand birds are regularly recorded from Roebuck Bay. The great knot feeds on a variety of invertebrates by pecking at or just below the surface of moist mud or sand (Threatened Species Scientific Committee, 2016a).
Bar-tailed godwit (<i>menzbieri</i>)	The bar-tailed godwit is a large, migratory shorebird and there are two sub-species in the EAAF (<i>Limosa lapponica baueri</i> and <i>L. l. menzbieri</i>). The sub-species <i>L. l. menzbieri</i> breeds in northern Siberia and spends its non-breeding period mostly in the north of WA but also in South-east Asia. The bar-tailed godwit (<i>menzbieri</i>) usually forages near the water in shallow water, mainly in tidal estuaries and harbours with a preference for exposed sandy or soft mud substrates on intertidal flats, banks and beaches (Threatened Species Scientific Committee, 2016c).
Red knot (<i>piersmai</i>)	This species is a small to medium migratory shorebird. There are two sub-species that cannot be distinguished from each other in nonbreeding plumage, however, <i>Calidris canutus piersmai</i> tend to overwinter almost exclusively in north-west Australia. The red knot migrates long distances from breeding grounds in high northern latitudes, where it breeds during the boreal summer, to the Southern Hemisphere during the austral summer with migration along the EAAF. Very large numbers are recorded for the north-west Australia and is common in all suitable habitats around the coast, including inland clay pans near Roebuck Bay (where the species roosts). The red knot usually forages in soft substrate along the waters edge on intertidal mudflats, sandflats and sandy beaches of sheltered coasts (Threatened Species Scientific Committee, 2016b).
Lesser sand plover	The lesser sand plover is a small to medium shorebird and one of 36 migratory shorebirds that breed in the Northern Hemisphere during the boreal summer and are known to annually migrate to the non-breeding grounds of Australia along the EAAF for the austral summer. There are five different sub-species and it is most likely the non-breeding ranges of the sub-species <i>Charadrius m. mongolus</i> overlaps with the NWMR. This species is widespread in coastal regions, preferring sandy beaches, mudflats of coastal bays and estuaries (Threatened Species Scientific Committee, 2016e).
Greater sand plover	The greater sand plover is a small to medium shorebird and in its non-breeding plumage is difficult to distinguish from the lesser sand plover. This species breeds in the Northern

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Species	Key Information
	Hemisphere and undertakes annual migrations to and from Southern Hemisphere feeding grounds in the austral summer along the EAAF. The species distribution in Australia during the non-breeding season is widespread, in WA the greater sand plover is widespread between Northwest Cape and Roebuck Bay (Threatened Species Scientific Committee, 2016d).

9. KEY ECOLOGICAL FEATURES

Key ecological features (KEFs) are elements of the Commonwealth marine environment that are considered to be important for a marine region's biodiversity or ecosystem function and integrity. KEFs have been identified by the Australian Government based on advice from scientists about the ecological processes and characteristics of the area.

KEFs meet one or more of the following criteria:

- a species, group of species, or a community with a regionally important ecological role (e.g. a predator, prey that affects a large biomass or number of other marine species),
- a species, group of species or a community that is nationally or regionally important for biodiversity,
- an area or habitat that is nationally or regionally important for:
 - enhanced or high productivity (such as predictable upwellings – an upwelling occurs when cold nutrient-rich waters from the bottom of the ocean rise to the surface),
 - aggregations of marine life (such as feeding, resting, breeding or nursery areas), or
 - biodiversity and endemism (species which only occur in a specific area),
- a unique seafloor feature, with known or presumed ecological properties of regional significance.

Thirteen KEFs are designated within the NWMR, twelve KEFs within the SWMR and eight KEFs within the NMR. These KEFs have been identified in the Protected Matters search (**Appendix A**) and outlined in **Table 9-1**, **Table 9-2** and **Table 9-3**, and **Figure 9-1**, **Figure 9-2** and **Figure 9-3**.

Table 9-1 Key Ecological Features (KEF) within the NWMM

KEF Name	Woodside Activity Area			Values ¹	Description
	Browse	NWS/S	NW Cape		
Carbonate bank and terrace system of the Sahul Shelf	✓	-	-	<p>Unique seafloor feature with ecological properties of regional significance</p> <p>Regionally important because of their role in enhancing biodiversity and local productivity relative to their surrounds. The carbonate banks and terraces provide areas of hard substrate in an otherwise soft sediment environment which are important for sessile species</p>	<p>The Carbonate banks and terrace system of the Sahul Shelf are located in the western Joseph Bonaparte Gulf and to the north of Cape Bougainville and Cape Londonderry. The carbonate banks and terraces are part of a larger complex of banks and terraces that occurs on the Van Diemen Rise in the adjacent NMR.</p> <p>The bank and terrace system of the Van Diemen Rise covers approximately 31,278 km² and forms part of the larger system associated with the Sahul Banks to the north and Londonderry Rise to the east. The feature is characterised by terrace, banks, channels and valleys (DSEWPAC, 2012c). The banks, ridges and terraces of the Van Diemen Rise are raised geomorphic features with relatively high proportions of hard substrate that support sponge and octocoral gardens. These, in turn, provide habitat to other epifauna, by providing structure in an otherwise flat environment (Przeslawski <i>et al.</i>, 2011). Plains and valleys are characterised by scattered epifauna and infauna that include polychaetes and ascidians. These epibenthic communities support higher order species such as olive ridley turtles, sea snakes and sharks (DSEWPAC, 2012c)</p>
Pinnacles of the Bonaparte Basin	✓	-	-	<p>Unique seafloor feature with ecological properties of regional significance</p> <p>Provide areas of hard substrate in an otherwise soft sediment environment and so are important for sessile species</p> <p>Recognised as a biodiversity hotspot for sponges</p> <p>The Pinnacles of the Bonaparte Basin KEF is located within both the NWMM and NMR (refer Table 9-3)</p>	<p>The Pinnacles of the Bonaparte Basin provide areas of hard substrate in an otherwise relatively featureless environment, the pinnacles are likely to support a high number of species, although a better understanding of the species richness and diversity associated with these structures is required (DSEWPAC, 2012a, 2012c). Covering >520 km² within the Bonaparte Basin, this feature contains the largest concentration of pinnacles along the Australian margin. The Pinnacles of the Bonaparte Basin are thought to be the eroded remnants of underlying strata; it is likely that the vertical walls generate local upwelling of nutrient-rich water, leading to phytoplankton productivity that attracts aggregations of planktivorous and predatory fish, seabirds, and foraging turtles (DSEWPAC, 2012a, 2012c).</p>
Ashmore Reef and Cartier Island and surrounding Commonwealth waters	✓	-	-	<p>High productivity, biodiversity and aggregation of marine life that apply to both the benthic and pelagic habitats within the feature</p>	<p>Ashmore Reef is the largest of only three emergent oceanic reefs present in the north-eastern Indian Ocean and is the only oceanic reef in the region with vegetated islands. Ashmore contains a large reef shelf, two large lagoons, several channelled carbonate sand flats, shifting sand cays, an extensive reef flat, three vegetated islands—East, Middle and West islands—and</p>

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KEF Name	Woodside Activity Area			Values ¹	Description
	Browse	NWS/S	NW Cape		
					surrounding waters. Rising from a depth of more than 100 m, the reef platform is at the edge of the NWS and covers an area of 239 km ² . Ashmore Reef and Cartier Island and the surrounding Commonwealth waters are regionally important for feeding and breeding aggregations of birds and other marine life; they are areas of enhanced primary productivity in an otherwise low-nutrient environment (DSEWPAC, 2012a). Ashmore Reef supports the highest number of coral species of any reef off the WA coast.
Seringapatam Reef and the Commonwealth waters in the Scott Reef complex	✓	-	-	Support diverse aggregations of marine life, have high primary productivity relative to other parts of the region, are relatively pristine and have high species richness, which apply to both the benthic and pelagic habitats within the feature	Seringapatam Reef and the Commonwealth waters in the Scott Reef complex are regionally important in supporting the diverse aggregations of marine life, high primary productivity, and high species richness associated with the reefs themselves. As two of the few offshore reefs in the north-west, they provide an important biophysical environment in the region (DSEWPAC, 2012a).
Continental slope demersal fish communities	✓	✓	✓	High biodiversity of demersal fish assemblages, including high levels of endemism	The diversity of demersal fish assemblages on the continental slope in the Timor Province, the Northwest Transition and the North-west Province is high compared to elsewhere along the Australian continental slope (DSEWPAC, 2012a). The continental slope between North-west Cape and the Montebello Trough has more than 500 fish species, 76 of which are endemic, which makes it the most diverse slope bioregion in Australia (Last <i>et al.</i> , 2005). The slope of the Timor Province and the Northwest Transition also contains more than 500 species of demersal fishes of which 64 are considered endemic (Last <i>et al.</i> , 2005), making it the second richest area for demersal fishes throughout the whole continental slope. Demersal fish species occupy two distinct demersal biomes associated with the upper slope (225–500 m water depths) and the mid-slope (750–1000 m). Although poorly known, it is suggested that the demersal slope communities rely on bacteria and detritus-based systems comprised of infauna and epifauna, which in turn become prey for a range of teleost fishes, molluscs and crustaceans (Brewer <i>et al.</i> , 2007). Higher-order consumers may include carnivorous fishes, deepwater sharks, large squid, and toothed whales (Brewer <i>et al.</i> , 2007). Pelagic production is phytoplankton-based, with hot spots around oceanic reefs and islands (Brewer <i>et al.</i> , 2007).

KEF Name	Woodside Activity Area			Values ¹	Description
	Browse	NWS/S	NW Cape		
Ancient coastline at 125 m depth contour	✓	✓	✓	<p>Unique seafloor feature with ecological properties of regional significance</p> <p>Provides areas of hard substrate and therefore may provide sites for higher diversity and enhanced species richness relative to surrounding areas of predominantly soft sediment</p>	<p>Several steps and terraces as a result of Holocene sea level changes occur in the region, with the most prominent of these features occurring as an escarpment along the NWMR and Sahul Shelf at a water depth of 125 m.</p> <p>The Ancient Coastline is not continuous throughout the NWMR and coincides with a well-documented eustatic stillstand at about 130 m worldwide (Falkner <i>et al.</i>, 2009).</p> <p>Where the Ancient Coastline provides areas of hard substrate, it may contribute to higher diversity and enhanced species richness relative to soft sediment habitat (Falkner <i>et al.</i>, 2009). Parts of the Ancient Coastline, represented as rocky escarpment, are considered to provide biologically important habitat in an area predominantly made up of soft sediment.</p> <p>The escarpment type features may also potentially facilitate mixing within the water column due to upwelling, providing a nutrient-rich environment. Although the Ancient Coastline adds additional habitat types to a representative system, the habitat types are not unique to the coastline as they are widespread on the upper shelf (Falkner <i>et al.</i>, 2009)</p>
Canyons linking the Argo Abyssal Plain and Scott Plateau	-	✓	-	<p>Facilitates nutrient upwelling, creating enhanced productivity and encouraging diverse aggregations of marine life</p>	<p>Interactions with the Leeuwin Current and strong internal tides are thought to result in upwelling at the canyon heads, thus creating conditions for enhanced productivity in the region (Brewer <i>et al.</i>, 2007). As a result, aggregations of whale sharks, manta rays, humpback whales, sea snakes, sharks, predatory fishes and seabirds are known to occur in the area due to its enhanced productivity (Sleeman <i>et al.</i>, 2007).</p>
Glomar Shoal	-	✓	-	<p>An area of high productivity and aggregations of marine life including commercial and recreational fish species</p>	<p>Glomar Shoal is a submerged littoral feature located about 150 km north of Dampier on the Rowley shelf at depths of 33–77 m (Falkner <i>et al.</i>, 2009). Studies by Abdul Wahab <i>et al.</i> (2018) found a number of hard coral and sponge species in water depths less than 40 m. One hundred and seventy (170) different species of fishes were detected with greatest species richness and abundance in shallow habitats (Abdul Wahab <i>et al.</i>, 2018). Fish species present include a number of commercial and recreational species such as Rankin cod, brown striped snapper, red emperor, crimson snapper, bream and yellow-spotted triggerfish (Falkner <i>et al.</i>, 2009; Fletcher and Santoro, 2009). These species have recorded high catch rates associated with Glomar Shoal, indicating that the shoal is likely to be an area of high productivity.</p>

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KEF Name	Woodside Activity Area			Values ¹	Description
	Browse	NWS/S	NW Cape		
Mermaid Reef and Commonwealth waters surrounding Rowley Shoals	-	✓	-	Regionally important in supporting high species richness, higher productivity and aggregations of marine life	The Mermaid Reef and Commonwealth waters surrounding the Rowley Shoals KEF and is adjacent to the three nautical mile State waters limit surrounding Clerke and Imperieuse reefs, and include the Mermaid Reef Marine Park as described in Section 10 . The reefs provide a distinctive biophysical environment in the region. They have steep and distinct reef slopes and associated fish communities. In evolutionary terms, the reefs may play a role in supplying coral and fish larvae to reefs further south via the southward flowing Indonesian Throughflow. Both coral communities and fish assemblages differ from similar habitats in eastern Australia (Done <i>et al.</i> , 1994).
Exmouth Plateau	-	✓	✓	Unique seafloor feature with ecological properties of regional significance, which apply to both benthic and pelagic habitats Likely to be an important area of biodiversity as it provides an extended area offshore for communities adapted to depths of approximately 1000 m	The Exmouth Plateau is a large, mid-slope, continental margin plateau that lies off the northwest coast of Australia. It ranges in depth from about 500 to more than 5000 m and is a major structural element of the Carnarvon Basin (Miyazaki and Stagg, 2013). The large size of the Exmouth Plateau and its expansive surface may modify deep water flow and be associated with the generation of internal tides; both of which may subsequently contribute to the upwelling of deeper, nutrient-rich waters closer to the surface (Brewer <i>et al.</i> , 2007). Satellite observations suggest that productivity is enhanced along the northern and southern boundaries of the plateau (Brewer <i>et al.</i> , 2007). Sediments on the plateau suggest that biological communities include scavengers, benthic filter feeders and epifauna (DSEWPAC, 2012a). Fauna in the pelagic waters above the plateau are likely to include small pelagic species and nekton attracted to seasonal upwellings, as well as larger predators such as billfishes, sharks and dolphins (Brewer <i>et al.</i> , 2007). Protected and migratory species are also known to pass through the region, including whale sharks and cetaceans.
Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula	-	-	✓	Unique seafloor feature with ecological properties of regional significance The feature is an area of moderately enhanced productivity, attracting aggregations of fish and higher-order consumers such as large predatory	The canyons are associated with upwelling as they channel deep water from the Cuvier Abyssal Plain up onto the slope. This nutrient-rich water interacts with the Leeuwin Current at the canyon heads (DSEWPAC, 2012a). Aggregations of whale sharks, manta rays, sea snakes, sharks, large predatory fish, and seabirds are known to occur in this area.

KEF Name	Woodside Activity Area			Values ¹	Description
	Browse	NWS/S	NW Cape		
				fish, sharks, toothed whales and dolphins Likely to be important due to their historical association with sperm whale aggregations	
Commonwealth waters adjacent to Ningaloo Reef	-	-	✓	High productivity and diverse aggregations of marine life The Commonwealth waters adjacent to Ningaloo Reef and associated canyons and plateau are interconnected and support the high productivity and species richness of Ningaloo Reef, globally significant as the only extensive coral reef in the world that fringes the west coast of a continent	The Leeuwin and Ningaloo currents interact, leading to areas of enhanced productivity in the Commonwealth waters adjacent to Ningaloo Reef. Aggregations of whale sharks, manta rays, humpback whales, sea snakes, sharks, large predatory fish, and seabirds are known to occur in this area (DSEWPAC, 2012a). The spatial boundary of this KEF, as defined in the NCVA, is defined as the waters contained in the existing Ningaloo AMP provided in Section 10 .
Wallaby Saddle	-	-	✓	High productivity and aggregations of marine life: Representing almost the entire area of this type of geomorphic feature in the NWMR. It is a unique habitat that neither occurs anywhere else nearby (within hundreds of kilometres) nor with as large an area (Falkner <i>et al.</i> 2009)	The Wallaby Saddle may be an area of enhanced productivity. Historical whaling records provide evidence of sperm whale aggregations in the area of the Wallaby Saddle, possibly due to the enhanced productivity of the area and aggregations of baitfish (DSEWPAC, 2012a).

¹: Values description sourced from Marine bioregional plan for the North-west Marine Region (DSEWPAC, 2012a) and the Department of Agriculture, Water and the Environment (DAWE) SPRAT database.

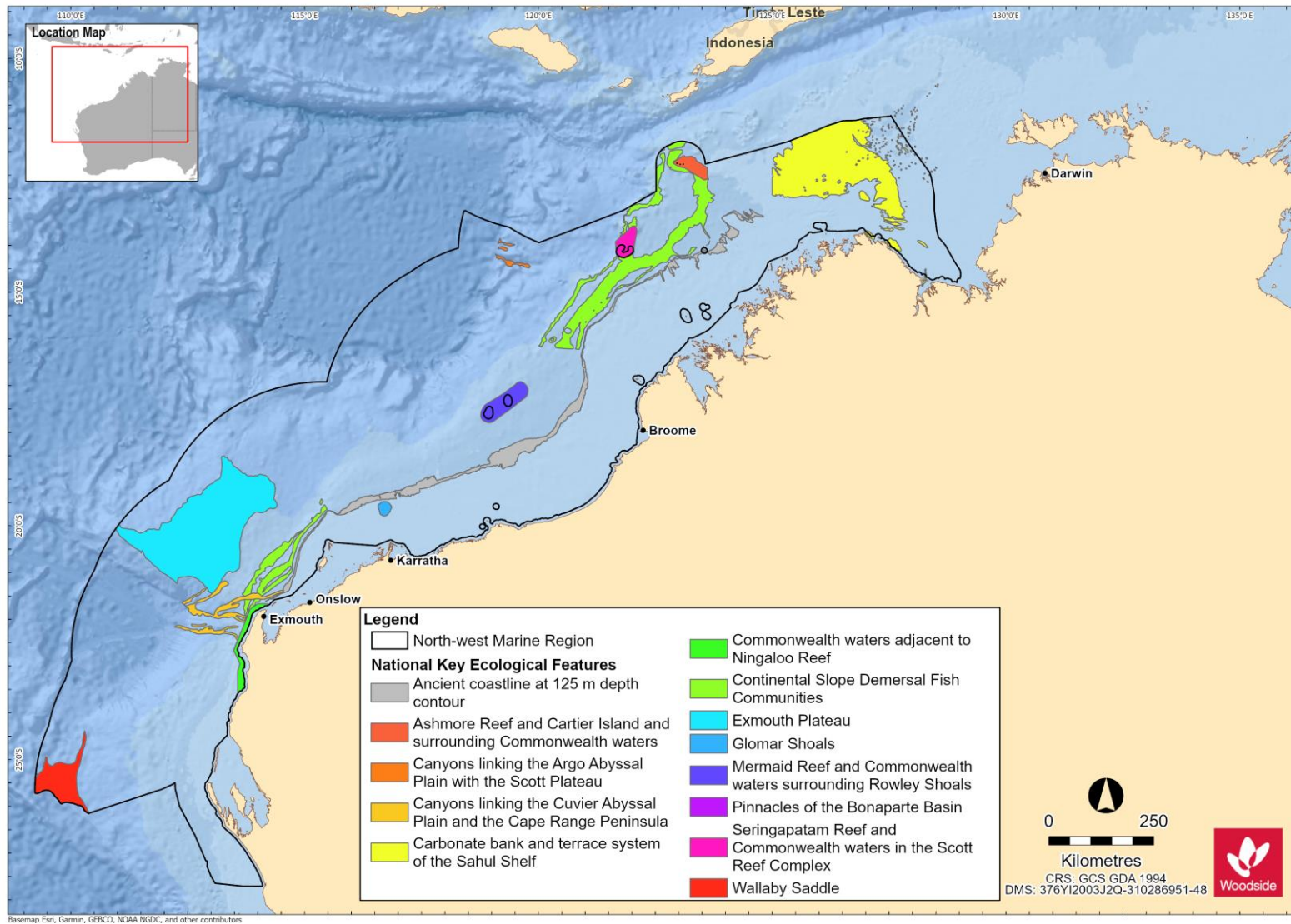


Figure 9-1 Key Ecological Features (KEFs) within the NWMR.

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Table 9-2 Key Ecological Features (KEF) within the SWMR

KEF Name	Values ¹	Description
Albany Canyons group and adjacent shelf break	High productivity and aggregations of marine life, and unique seafloor feature with ecological properties of regional significance Both benthic and demersal habitats within the feature are of conservation value	The Albany Canyons group is thought to be associated with small, periodic subsurface upwelling events, which may drive localised regions of high productivity. The canyons are known to be a feeding area for sperm whale and sites of orange roughly aggregations. Anecdotal evidence also indicates that this area supports fish aggregations that attract large predatory fish and sharks.
Ancient coastline at 90-120 m depth	Relatively high productivity and aggregations of marine life, and high levels of biodiversity and endemism The feature creates topographic complexity, that may facilitate benthic biodiversity and enhanced biological productivity	Benthic biodiversity and productivity occur where the ancient coastline forms a prominent escarpment, such as in the western Great Australian Bight, where the sea floor is dominated by sponge communities of significant biodiversity and structural complexity.
Cape Mentelle upwelling	Facilitates nutrient upwelling, supporting high productivity and diverse aggregations of marine life	The Cape Mentelle upwelling draws relatively nutrient-rich water from the base of the Leeuwin Current, up the continental slope and onto the inner continental shelf, where it results in phytoplankton blooms at the surface. The phytoplankton blooms provide the basis for an extended food chain characterised by feeding aggregations of small pelagic fish, larger predatory fish, seabirds, dolphins and sharks.
Commonwealth marine environment surrounding the Houtman Abrolhos Islands (and adjacent shelf break)	High levels of biodiversity and endemism within benthic and pelagic habitats	The Houtman Abrolhos Islands and surrounding reefs support a unique mix of temperate and tropical species, resulting from the southward transport of species by the Leeuwin Current over thousands of years. The Houtman Abrolhos Islands are the largest seabird breeding station in the eastern Indian Ocean. They support more than one million pairs of breeding seabirds.

KEF Name	Values ¹	Description
Commonwealth marine environment surrounding the Recherche Archipelago	Aggregations of marine life and high levels of biodiversity and endemism within benthic and demersal communities	The Recherche Archipelago is the most extensive area of reef in the SWMR. Its reef and seagrass habitat supports a high species diversity of warm temperate species, including 263 known species of fish, 347 known species of molluscs, 300 known species of sponges, and 242 known species of macroalgae. The islands also provide haul-out (resting areas) and breeding sites for Australian sea lions and New Zealand fur seals.
Commonwealth marine environment within and adjacent to the west-coast inshore lagoons	High productivity and aggregations of marine life within benthic and pelagic habitats Important for benthic productivity and recruitment for a range of marine species	These lagoons are important for benthic productivity, including macroalgae and seagrass communities, and breeding and nursery aggregations for many temperate and tropical marine species. They are important areas for the recruitment of commercially and recreationally important fish species. Extensive schools of migratory fish visit the area annually, including herring, garfish, tailor and Australian salmon.
Commonwealth marine environment within and adjacent to Geographe Bay	High productivity and aggregations of marine life, and high levels of biodiversity, recruitment within benthic and pelagic communities	Geographe Bay is known for its extensive beds of tropical and temperate seagrass that support a diversity of species, many of them not found anywhere else. The bay provides important nursery habitat for many species. Juvenile dusky whaler sharks use the shallow seagrass habitat as nursery grounds for several years, before ranging out to adult feeding grounds along the shelf break. The seagrass also provides valuable habitat for fish and invertebrates (Carruthers <i>et al.</i> , 2007). It is also an important resting area for migratory humpback whales.
Diamantina Fracture Zone	Unique seafloor feature with ecological properties of regional significance which apply to its benthic and demersal habitats	The Diamantina Fracture Zone is a rugged, deep- water environment of seamounts and numerous closely spaced troughs and ridges. Very little is known about the ecology of this remote, deep- water feature, but marine experts suggest that its size and physical complexity mean that it is likely to support deep-water communities characterised by high species diversity, with many species found nowhere else.
Naturaliste Plateau	Unique seafloor feature with ecological properties of regional significance including high species diversity and endemism which apply to its benthic and demersal habitats	The Naturaliste Plateau is Australia's deepest temperate marginal plateau. The combination of its structural complexity, mixed water dynamics and relative isolation indicate that it supports deep- water communities with high species diversity and endemism.
Perth Canyon and adjacent shelf break, and other west-coast canyons	An area of higher productivity that attracts feeding aggregations of deep-diving mammals and large predatory fish. It is also recognised as a unique seafloor feature with ecological properties of regional significance	The Perth Canyon is the largest known undersea canyon in Australian waters. Deep ocean currents rise to the surface, creating a nutrient-rich cold- water habitat attracting feeding aggregations of deep-diving mammals, such as pygmy blue whales and large predatory fish that feed on aggregations of small fish, krill and squid.

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KEF Name	Values ¹	Description
Western demersal slope and associated fish communities of the Central Western Province	Provides important habitat for demersal fish communities and supports species groups that are nationally or regionally important to biodiversity	The western demersal slope provides important habitat for demersal fish communities, with a high level of diversity and endemism. A diverse assemblage of demersal fish species below a depth of 400 m is dominated by relatively small benthic species such as grenadiers, dogfish and cucumber fish. Unlike other slope fish communities in Australia, many of these species display unique physical adaptations to feed on the sea floor (such as a mouth position adapted to bottom feeding), and many do not appear to migrate vertically in their daily feeding habits.
Western rock lobster	A species that plays a regionally important ecological role	This species is the dominant large benthic invertebrate in the region. The lobster plays an important trophic role in many of the inshore ecosystems of the SWMR. Western rock lobsters are an important part of the food web on the inner shelf, particularly as juveniles.

¹. Values description sourced from Marine bioregional plan for the South-west Marine Region (DSEWPAC, 2012b) and the Department of Agriculture, Water and the Environment (DAWE) SPRAT database

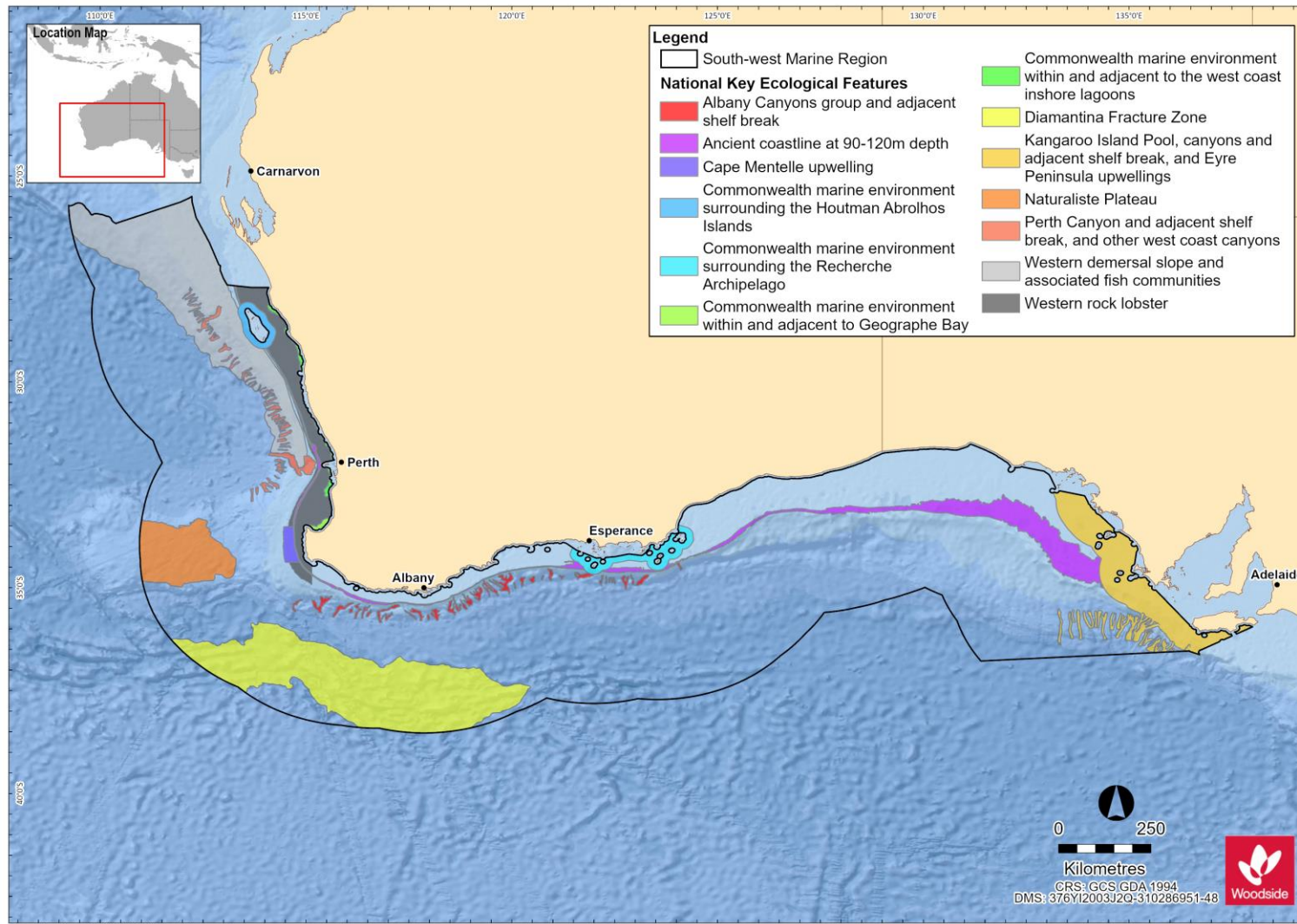


Figure 9-2. Key Ecological Features (KEFs) within the SWMR

Table 9-3 Key Ecological Features (KEF) within the NMR

KEF Name	Values ¹	Description
Carbonate bank and terrace system of the Van Diemen Rise	Important for its role in enhancing biodiversity and local productivity relative to its surrounds and for supporting relatively high species diversity The feature has been identified as a sponge biodiversity hotspot (Przeslawski <i>et al.</i> 2014)	The bank and terrace system of the Van Diemen Rise is part of the larger system associated with the Sahul Banks to the north and Londonderry Rise to the east; it is characterised by terrace, banks, channels and valleys. The variability in water depth and substrate composition may contribute to the presence of unique ecosystems in the channels. Species present include sponges, soft corals and other sessile filter feeders associated with hard substrate sediments of the deep channels; epifauna and infauna include polychaetes and ascidians. Olive ridley turtles, sea snakes and sharks are also found associated with this feature.
Gulf of Carpentaria basin	Regional importance for biodiversity, endemism and aggregations of marine life relevant to benthic and pelagic habitats	The Gulf of Carpentaria basin is one of the few remaining near-pristine marine environments in the world. Primary productivity in the Gulf of Carpentaria basin is mainly driven by cyanobacteria that fix nitrogen but is also strongly influenced by seasonal processes. The soft sediments of the basin are characterised by moderately abundant and diverse communities of infauna and mobile epifauna dominated by polychaetes, crustaceans, molluscs, and echinoderms. The basin also supports assemblages of pelagic fish species including planktivorous and schooling fish, with top predators such as shark, snapper, tuna, and mackerel.
Gulf of Carpentaria coastal zone	High productivity, aggregations of marine life (including several endemic species) and high biodiversity compared to broader region	Nutrient inflow from rivers adjacent to the NMR generates higher productivity and more diverse and abundant biota within the Gulf of Carpentaria coastal zone than elsewhere in the region. The coastal zone is near pristine and supports many protected species such as marine turtles, dugongs, and sawfishes. Ecosystem processes and connectivity remain intact; river flows are mostly uninterrupted by artificial barriers and healthy, diverse estuarine and coastal ecosystems support many species that move between freshwater and saltwater environments.
Pinnacles of the Bonaparte Basin	Unique seafloor feature with ecological properties of regional significance Provide areas of hard substrate in an otherwise soft sediment environment and so are important for sessile species Recognised as a biodiversity hotspot for sponges The Pinnacles of the Bonaparte Basin KEF is located within both the NWMR and NMR (refer Table 9-1)	Covering more than 520 km ² within the Bonaparte Basin, this feature contains the largest concentration of pinnacles along the Australian margin. The Pinnacles of the Bonaparte Basin are thought to be the eroded remnants of underlying strata; it is likely that the vertical walls generate local upwelling of nutrient-rich water, leading to phytoplankton productivity that attracts aggregations of planktivorous and predatory fish, seabirds and foraging turtles.

KEF Name	Values ¹	Description
Plateaux and saddle north-west of the Wellesley Islands	High species abundance, diversity and endemism of marine life	Abundance and species density are high in the plateaux and saddle as a result of increased biological productivity associated with habitats rather than currents. Submerged reefs support corals that are typical of northern Australia, including corals that have bleach-resistant zooxanthellae; and particular reef fish species that are different to those found elsewhere in the Gulf of Carpentaria. Species present include marine turtles and reef fish such as coral trout, cod, mackerel, and shark. Seabirds frequent the plateaux and saddle, most likely due to the presence of predictable food resources for feeding offspring.
Shelf break and slope of the Arafura Shelf	The Shelf break and slope of the Arafura Shelf is defined as a key ecological feature for its ecological significance associated with productivity emanating from the slope It also forms part of a unique biogeographic province (Last <i>et al.</i> , 2005)	The shelf break and slope of the Arafura Shelf is characterised by continental slope and patch reefs and hard substrate pinnacles. The ecosystem processes of the feature are largely unknown in the region; however, the Indonesian Throughflow and surface wind-driven circulation are likely to influence nutrients, pelagic dispersal and species and biological productivity in the region. Biota associated with the feature is largely of Timor–Indonesian Malay affinity.
Submerged coral reefs of the Gulf of Carpentaria	High aggregations of marine life, biodiversity and endemism Twenty per cent of the reefs found in the NMR are situated within this KEF (Harris <i>et al.</i> , 2007)	The submerged coral reefs of the Gulf of Carpentaria are characterised by submerged patch, platform and barrier reefs that form a broken margin around the perimeter of the Gulf of Carpentaria basin, rising from the sea floor at depths of 30–50 m. These reefs provide breeding and aggregation areas for many fish species including mackerel and snapper and offer refuges for sea snakes and apex predators such as sharks. Coral trout species that inhabit the submerged reefs are smaller than those found in the Great Barrier Reef and may prove to be an endemic sub-species.
Tributary Canyons of the Arafura Depression	High productivity and high levels of species diversity and endemism of marine life within the benthic and pelagic habitats of the feature	The tributary canyons are approximately 80–100 m deep and 20 km wide. The largest of the canyons extend some 400 km from Cape Wessel into the Arafura Depression, and are the remnants of a drowned river system that existed during the Pleistocene era. Sediments in this feature are mainly calcium-carbonate rich, although sediment type varies from sandy substrate to soft muddy sediments and hard, rocky substrate. Marine turtles, deep sea sponges, barnacles and stalked crinoids have all been identified in the area.

¹. Values description sourced from *Marine bioregional plan for the North Marine Region (DSEWPAC, 2012c)* and *Department of Agriculture, Water and the Environment (DAWE) SPRAT database*.

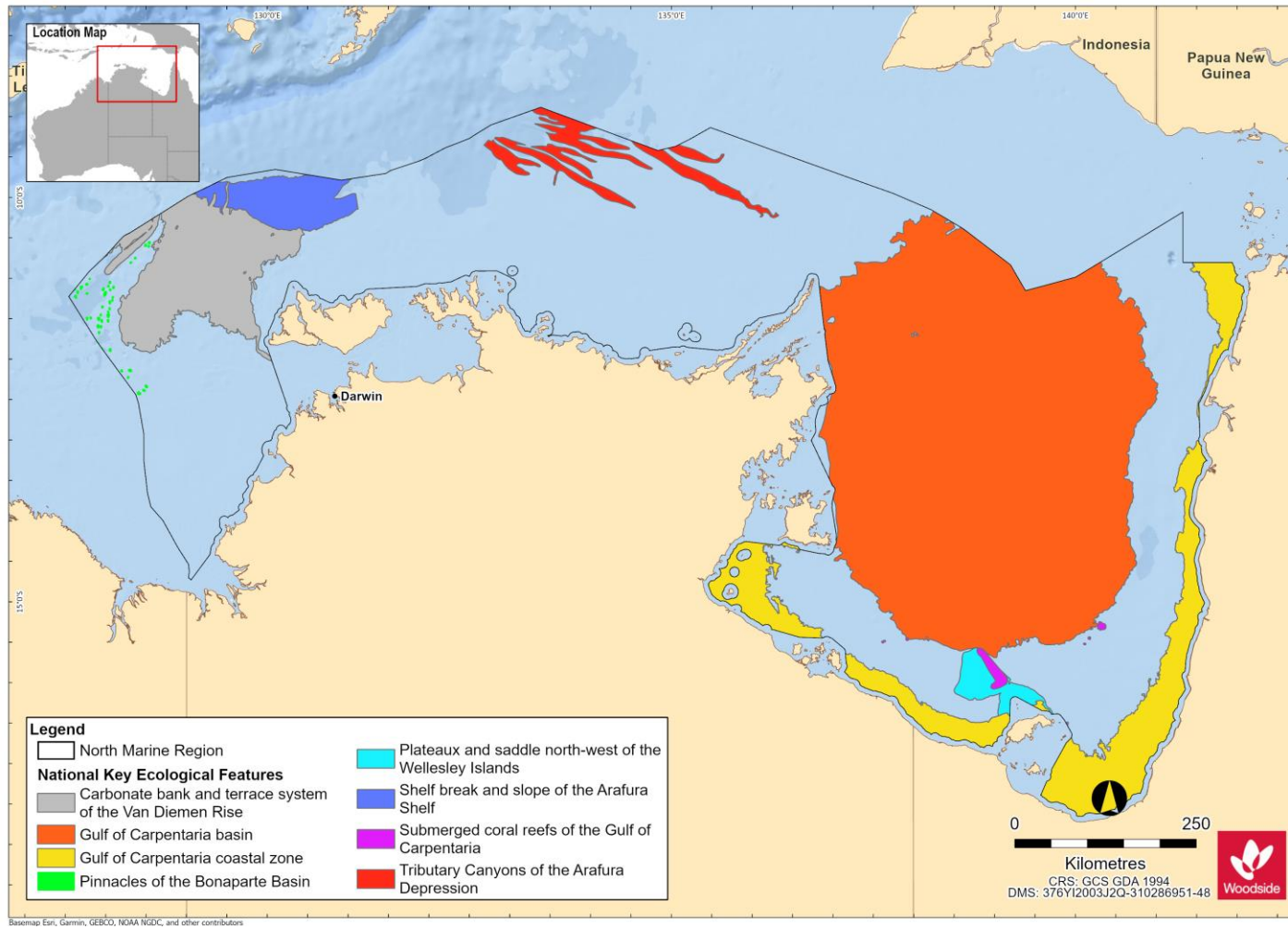


Figure 9-3. Key Ecological Features (KEFs) within the NMR

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10. PROTECTED AREAS

10.1 Regional Context

Protected areas included World Heritage Properties, National Heritage Places, Wetlands of International Importance, Australian Marine Parks, State Marine Parks and Reserves, Threatened Ecological Communities and the Australian Whale Sanctuary. The PMST Reports (**Appendix A**) shows that there are twenty-nine protected areas found in the NWMR, eighteen in the SWMR and nine in the NMR.

Table 10-1, **Table 10-2** and **Table 10-3** outline the protected areas of each of the marine regions NWMR, SWMR and NMR, respectively.

10.2 World Heritage Properties

Properties nominated for World Heritage listing are inscribed on the list only after they have been carefully assessed as representing the best examples of the world's cultural and natural heritage. Only World Heritage listings classed as natural are discussed in this section. World Heritage sites classed as cultural are discussed in **Section 11**.

The list of Australia's World Heritage Properties and the PMST Reports (**Appendix A**) show two World Heritage Properties within the NWMR (**Table 10-1**), no World Heritage Properties within the SWMR (**Table 10-2**), and though not reported in the NMR PMST Report, Kakadu National Park and World Heritage Area is included in **Table 10-3**.

10.3 National and Commonwealth Heritage Places - Natural

The National Heritage List is Australia's list of natural, historic, and Indigenous places of outstanding significance to the nation. The National Heritage List Spatial Database describes the place name, class (Indigenous, natural, historic), and status. Commonwealth Heritage Places are a collection of sites recognised for their Indigenous, historical and/or natural values which are owned or controlled by the Australian Government.

Only National and Commonwealth Heritage Places classed as natural are discussed in this section. Heritage Places classed as indigenous or historic are discussed in **Section 11**.

A search of the National Heritage List Spatial Database and the PMST Reports (**Appendix A**) identified three natural National Heritage Places in the NWMR (**Table 10-1**), three in the SWMR (**Table 10-2**) and for the NMR, Kakadu National Park (not included in the PMST report) is included in **Table 10-3**.

A search of the Commonwealth Heritage List identified four natural commonwealth heritage places within the NWMR (**Table 10-1**).

10.4 Wetlands of International Importance (listed under the Ramsar Convention)

Australia has 65 Ramsar wetlands that cover >8.3 million ha. Ramsar wetlands are those that are representative, rare, or unique wetlands, or that are important for conserving biological diversity.

The List of Wetlands of International Importance held under the Ramsar Convention and the PMST Reports (**Appendix A**) identified four Ramsar Sites with coastal features within the NWMR (**Table 10-1**), four in the SWMR (**Table 10-2**) and two for the New Territory, included for the NMR (**Table 10-3**).

10.5 Australian Marine Parks

Australian Marine Parks (AMPs), proclaimed under the EPBC Act in 2007 and 2013, are located in Commonwealth waters that start at the outer edge of State and Territory waters, generally three

nautical miles (~5.5 km) from the shore, and extend to the outer boundary of Australia's EEZ, 200 nm (~370 km) from the shore.

PMST Reports (**Appendix A**) show sixteen AMPs within the NWMR (**Table 10-1**), ten within the SWMR (**Table 10-2**) and eight within the NMR (**Table 10-3**).

10.6 Threatened Ecological Communities

No Threatened Ecological Communities (TECs) as listed under the EPBC Act are known to occur within the marine waters of the NWMR, SWMR or NMR as indicated by the PMST Reports (**Appendix A**).

10.7 Australian Whale Sanctuary

The Australian Whale Sanctuary has been established to protect all whales and dolphins found in Australian waters. Under the EPBC Act all cetaceans (whales, dolphins and porpoises) are protected in Australian waters.

The Australian Whale Sanctuary includes all Commonwealth waters from the three nautical mile State/Territory waters limit out to the boundary of the EEZ (i.e. out to 200 nm and further in some places). Within the Sanctuary it is an offence to kill, injure or interfere with a cetacean. Severe penalties apply to anyone convicted of such offences.

10.8 State Marine Parks and Reserves

State Marine Parks and Reserves, proclaimed under the *Conservation and Land Management Act 1984* (CALM Act), are located in State waters and vested in the WA Conservation and Parks Commission. State Marine Parks and Reserves of Western Australia have been considered, with 14 occurring in the NWMR (**Table 10-1**) and six occurring in the SWMR (**Table 10-2**).

10.9 Summary of Protected Areas within the NWMR

Table 10-1 Protected Areas within the NWMR

Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
World Heritage Properties						
Shark Bay World Heritage Property	-	-	✓		The Shark Bay World Heritage Property is adjacent to the Shark Bay AMP and was included on the World Heritage List in 1991.	Universal values of the Shark Bay World Heritage Property include large and diverse seagrass beds, stromatolites and populations of dugong and threatened species. Inscribed under Natural Criteria vii, viii, ix and x.
The Ningaloo Coast World Heritage Property	-	-	✓		The Ningaloo Coast World Heritage Property lies within the Ningaloo AMP and was included on the World Heritage List in 2011.	Universal values of the Ningaloo Coast World Heritage Property include high marine species diversity and abundance; in particular, Ningaloo Reef supports both tropical and temperate marine reptiles and mammals. Inscribed under Natural Criteria vii and x.
National Heritage Places - Natural						
Shark Bay	-	-	✓		The Shark Bay National Heritage Place consists of the same area included in the Shark Bay World Heritage Property (refer above) and was established on the National Heritage List in 2007.	The national heritage place has a number of exceptional natural features, including one of the largest and most diverse seagrass beds in the world, colonies of stromatolites and rich marine life including a large population of dugongs, and also provides a refuge for a number of other globally threatened species. Shark Bay meets the national heritage listing criteria a, b, c, d, e, f, g, h and i.
The Ningaloo Coast	-	-	✓		The Ningaloo Coast National Heritage Place consists of the same area included in the Ningaloo	The Ningaloo Coast contains one of the best developed near-shore reefs in the world, being home to rugged limestone peninsulas, spectacular coral and sponge gardens and the whale shark.

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
					Coast World Heritage Property (refer above) and was established on the National Heritage List in 2010.	The Ningaloo Coast meets the national heritage listing criteria a, b, c, d, and f.
The West Kimberley	✓	✓	-		The West Kimberley National Heritage Place covers an area of around 192,000 km ² located in the north-west of Australia from Broome to Wyndham, and was established on the National Heritage List in 2011.	The Kimberley plateau, north-western coastline and northern rivers of the West Kimberley provide a vital refuge for many native plants and animals that are found nowhere else or which have disappeared from much of the rest of Australia. In addition, Roebuck Bay is internationally recognised as one of Australia's most significant sites for migratory wading birds. The national heritage place also contains a remarkable history of Aboriginal occupation, with many places of indigenous sacred value. The West Kimberley meets the national heritage listing criteria a, b, c, d, e, f, g, h and i.
Commonwealth Heritage Places - Natural						
Mermaid Reef – Rowley Shoals	-	✓	-	N/A	The Mermaid Reef – Rowley Shoals Commonwealth Heritage Place is located within the boundary of the Mermaid Reef Marine National Nature Reserve. The site was listed as a Commonwealth Heritage Place in 2004.	The Mermaid Reef-Rowley Shoals Commonwealth Heritage Place is regionally important for the diversity of its fauna and together with Clerke and Imperieuse reefs, has biogeographical significance due to the presence of species which are at, or close to, the limits of their geographic ranges, including fishes known previously only from Indonesian waters. Rowley Shoals is important for benchmark studies as one of the few places off the north-west coast of Western Australia which have been the site of major biological collection trips by the WA Museum.

Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
Ashmore Reef National Nature Reserve	✓	-	-		The Ashmore Reef Commonwealth Heritage Place is located within the boundary of the Ashmore Reef Marine Park (refer AMPs below). The site was listed as a Commonwealth Heritage Place in 2004.	Ashmore Reef has major significance as a staging point for wading birds migrating between Australia and the Northern Hemisphere and supports high concentrations of breeding seabirds, many of which are nomadic and typically breed on small isolated islands. Ashmore Reef is an important scientific reference area for migratory seabirds, sea snakes and marine invertebrates. The Ashmore Reef Commonwealth Heritage Place is significant for its history of human occupation and use. The island is believed to have been visited by Indonesian fisherman since the early eighteenth century. The islands were used both for fishing and as a staging point for voyages to the southern reefs off Australia's coast.
Scott Reef and Surrounds – Commonwealth Area	✓	-	-		Scott Reef and Surrounds Commonwealth Heritage Place is located within the Western Australian Coastal Waters surrounding North and South Scott Reef. The site was listed as a Commonwealth Heritage Place in 2004.	The Scott Reef and Surrounds Commonwealth Heritage Place is regionally important for the diversity of its fauna and has biogeographical significance due to the presence of species which are at, or close to, the limits of their geographic ranges, including fish known previously only from Indonesian waters. Scott Reef is recognised as important for scientific research and benchmark studies due to its age, the extensive documentation of its geophysical and physical environmental characteristics and its use as a site of major biological collection trips and surveys by the WA Museum and the Australian Institute of Marine Science.

Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
Ningaloo Marine Area – Commonwealth Waters	-	-	✓		The Ningaloo Marine Area Commonwealth Heritage Place is located within the Commonwealth waters of the Ningaloo Marine Park (refer AMPs below). The site was listed as a Commonwealth Heritage Place in 2004.	The Ningaloo Marine Area Commonwealth Heritage Place provides a migratory pathway for humpback whales and foraging habitat for whale sharks. The place is an important breeding area for billfish and manta ray. The Ningaloo Marine Area provides opportunities for scientific research relating to aspects of the area's unique features including tourism (marine ecology, whales, turtles, whale sharks, fish and oceanography).
Wetlands of International Importance (Ramsar)						
Ashmore Reef National Nature Reserve	✓	-	-	Ramsar	The Ashmore Reef Ramsar site is located within the boundary of the Ashmore Reef Marine Park (refer AMPs below). The site was listed under the Ramsar Convention in 2002.	Ashmore Reef Ramsar site supports internationally significant populations of seabirds and shorebirds, is important for turtles (green, hawksbill and loggerhead) and dugong, and has the highest diversity of hermatypic (reef-building) corals on the WA coast. It is known for its abundance and diversity of sea snakes. However, since 1998 populations of sea snakes at Ashmore Reef have been in decline.
Eighty Mile Beach	-	✓	-	Ramsar	The Eighty Mile Beach Ramsar site covers an area of 1250 km ² , located along a long section of the Western Australian coastline adjacent to the Eighty Mile Beach AMP (refer below).	The Eighty Mile Beach Ramsar site includes saltmarsh and a raised peat bog more than 7000 years old. The site contains the most important wetland for waders in north-western Australia, supporting up to 336,000 birds, and is especially important as a land fall for waders migrating south for the austral summer.
Roebuck Bay	-	✓	-	Ramsar	The Roebuck Bay Ramsar site covers an area of 550	The Roebuck Bay Ramsar site is recognised as one of the most important areas for migratory shorebirds in Australia.

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
					km ² , located south of Broome and adjacent to the Roebuck AMP (refer below).	The site regularly supports over 100,000 waterbirds, with numbers being highest in the austral spring when migrant species breeding in the Palearctic stop to feed during migration.
Ord River Floodplain	✓			Ramsar	The Ord River Floodplain Ramsar Site is in the East Kimberley region and encompasses an extensive system of river, seasonal creek, tidal mudflat, and floodplain wetlands. The Ramsar Site is a nursery, feeding and/or breeding ground for migratory birds, waterbirds, fish, crabs, prawns, and crocodiles.	The site represents the best example of wetlands associated with the floodplain and estuary of a tropical river system in the Tanami-Timor Sea Coast Bioregion in the Kimberley. In addition, the False Mouths of the Ord are the most extensive mudflat and tidal waterway complex in Western Australia.
Wetlands of National Importance (DAWE, 2019)						
Ashmore Reef	✓	-	-		Ashmore Reef is a shelf-edge platform reef located among the Sahul Banks of north-western Australia. It covers an area of 583 km ² and consists of three islets surrounded by intertidal reef and sand flats.	These islets are major seabird nesting sites with 20 breeding species recorded to date. The total bird population has been estimated to exceed 100,000 during the peak breeding season. The marine reserve also has the highest diversity of marine fauna of the reefs on the NWS and differs from other reefs and coastal areas in the region. The area meets criteria 1, 3, 4 and 5 for inclusion on the Directory of Important Wetlands in Australia.
Mermaid Reef	-	✓	-		Mermaid Reef Marine Park covers an area of around 540 km ² , located ~280 km west north-west of Broome, and is the most north-easterly atoll of the Rowley Shoals.	The reefs of the Mermaid Reef Marine Park have biogeographic value due to the presence of species that are at or close to the limit of their distribution. The coral communities are one of the special values of Mermaid Reef. The area meets criteria 1, 2 and 3 for inclusion on the Directory of Important Wetlands in Australia.

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	Browse	NWS/S	NW Cape			
Exmouth Gulf East	-	-	✓		Exmouth Gulf East covers an area of 800 km ² and includes wetlands in the eastern part of Exmouth Gulf, from Giralia Bay; to Urala Creek, Locker Point.	The Exmouth Gulf East is an outstanding example of tidal wetland systems of low coast of north-west Australia, with well- developed tidal creeks, extensive mangrove swamps and broad saline coastal flats. The site is one of the major population centres for dugong in WA and its seagrass beds and extensive mangroves provide nursery and feeding areas for marine fishes and crustaceans in the Gulf. The area meets criteria 1, 2 and 3 for inclusion on the Directory of Important Wetlands in Australia.
Hamelin Pool	-	-	✓		Hamelin Pool covers an area of 900 km ² in the far south-east part of Shark Bay.	Hamelin Pool is an outstanding example of a hypersaline marine embayment and supports extensive microbialite (subtidal stromatolite) formations, which are the most abundant and diverse examples of growing marine microbialites in the world. The area meets criteria 1 and 6 for inclusion on the Directory of Important Wetlands in Australia.
Shark Bay East	-	-	✓		Shark Bay East covers a 250 km area of coastline comprising tidal wetlands, and marine waters less than 6 m deep at low tide, in the east arm of Shark Bay.	The site is an outstanding example of a very large, shallow marine embayment, with particularly extensive occurrence of seagrass beds and substantial areas of intertidal mud/sandflats and mangrove swamp. The site supports what is probably the world's largest discrete population of dugong; it is also a major nursery and/or feeding area for turtles, rays, sharks, other fishes, prawns and other marine fauna; and is a major migration stop-over area for shorebirds. The area meets criteria 1, 2, 3, 4, 5 and 6 for inclusion on the Directory of Important Wetlands in Australia.
Australian Marine Parks (DNP, 2018a)						
Abrolhos Marine Park	-	-	✓	II, IV, VI	Abrolhos Marine Park is located adjacent to the WA Houtman Abrolhos Islands, covering a large offshore	Abrolhos Marine Park is significant because it contains habitats, species and ecological communities associated with four bioregions:

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
					<p>area of 88,060 km² extending from the WA State waters boundary to the edge of Australia's EEZ.</p> <p>The Abrolhos Marine Park is located within both the NWMR and SWMR.</p>	<ul style="list-style-type: none"> • Central Western Province • Central Western Shelf Province • Central Western Transition • South-west Shelf Transition <p>It includes seven KEFs: Commonwealth marine environment surrounding the Houtman Abrolhos Islands; Demersal slope and associated fish communities of the Central Western Province; Mesoscale eddies; Perth Canyon and adjacent shelf break, and other west-coast canyons; Western rock lobster; Ancient coastline at 90-120 m depth; and Wallaby Saddle.</p> <p>The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging and breeding habitat for seabirds, foraging habitat for Australian sea lions and white sharks, and a migratory pathway for humpback and pygmy blue whales. The AMP is adjacent to the northernmost Australian sea lion breeding colony in Australia on the Houtman Abrolhos Islands.</p>
Carnarvon Canyon Marine Park	-	-	✓	IV	Carnarvon Canyon Marine Park covers an area of 6177 km ² , located ~300 km north-west of Carnarvon.	Carnarvon Canyon Marine Park is significant because it contains habitats, species and ecological communities associated with the Central Western Transition bioregion. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. There is limited information about species' use of this AMP.
Shark Bay Marine Park	-	-	✓	VI	Shark Bay Marine Park covers an area of 7443 km ² located ~60 km offshore of Carnarvon, adjacent to the Shark Bay World Heritage Property and National Heritage Place.	<p>Shark Bay Marine Park is significant because it contains habitats, species and ecological communities associated with two bioregions:</p> <ul style="list-style-type: none"> • Central Western Shelf Province • Central Western Transition. <p>The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under</p>

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
						the EPBC Act. BIAs within the AMP include breeding habitat for seabirds, interesting habitat for marine turtles, and a migratory pathway for humpback whales.
Gascoyne Marine Park	-	-	✓	II, IV, VI	Gascoyne Marine Park covers an area of 81,766 km ² , located ~20 km off the west coast of the Cape Range Peninsula, adjacent to the Ningaloo Marine Park.	Gascoyne Marine Park is significant because it contains habitats, species and ecological communities associated with three bioregions: <ul style="list-style-type: none"> • Central Western Shelf Transition • Central Western Transition • Northwest Province. It includes four KEFs: Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula; Commonwealth waters adjacent to Ningaloo Reef; Continental slope demersal fish communities; and Exmouth Plateau. The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding habitat for seabirds, interesting habitat for marine turtles, a migratory pathway for humpback whales, and foraging habitat and migratory pathway for pygmy blue whales.
Ningaloo Marine Park	-	-	✓	II, IV	Ningaloo Marine Park covers an area of 2435 km ² , stretching ~300 km along the west coast of the Cape Range Peninsula, and is adjacent to the WA Ningaloo Marine Park and Gascoyne Marine Park.	Ningaloo Marine Park is significant because it contains habitats, species and ecological communities associated with four bioregions: <ul style="list-style-type: none"> • Central Western Shelf Transition • Central Western Transition • Northwest Province • Northwest Shelf Province. It includes three KEFs: Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula; Commonwealth waters adjacent to Ningaloo Reef; and Continental slope demersal fish communities. The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding and

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
						or foraging habitat for seabirds, interesting habitat for marine turtles, a migratory pathway for humpback whales, foraging habitat and migratory pathway for pygmy blue whales, breeding, calving, foraging and nursing habitat for dugong and foraging habitat for whale sharks.
Montebello Marine Park	-	✓	-	VI	Montebello Marine Park covers an area of 3413 km ² , located offshore of Barrow Island and 80 km west of Dampier extending from the WA State waters boundary, and is adjacent to the WA Barrow Island and Montebello Islands Marine Parks.	Montebello Marine Park is significant because it contains habitats, species and ecological communities associated with the Northwest Shelf Province bioregion. It includes one KEF: Ancient coastline at 125 m depth contour. The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding habitat for seabirds, interesting, foraging, mating, and nesting habitat for marine turtles, a migratory pathway for humpback whales and foraging habitat for whale sharks.
Dampier Marine Park	-	✓	-	II, IV, VI	Dampier Marine Park covers an area of 1252 km ² , located ~10 km north-east of Cape Lambert and 40 km from Dampier extending from the WA State waters boundary.	Dampier Marine Park is significant because it contains habitats, species and ecological communities associated with the Northwest Shelf Province bioregion. The AMP provides protection for offshore shelf habitats adjacent to the Dampier Archipelago, and the area between Dampier and Port Hedland, and is a hotspot for sponge biodiversity. The AMP supports a range of species including those listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding and foraging habitat for seabirds, interesting habitat for marine turtles and a migratory pathway for humpback whales.
Eighty Mile Beach Marine Park	-	✓	-	VI	Eighty Mile Beach Marine Park covers an area of 10,785 km ² , located ~74 km north-east of Port Hedland, adjacent to the	Eighty Mile Beach Marine Park is significant because it contains habitats, species and ecological communities associated with the Northwest Shelf Province and consists of shallow shelf habitats, including terrace, banks and shoals.

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
					WA Eighty Mile Beach Marine Park.	The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding, foraging and resting habitat for seabirds, interesting and nesting habitat for marine turtles, foraging, nursing and pupping habitat for sawfishes and a migratory pathway for humpback whales.
Argo – Rowley Terrace Marine Park	✓	✓	-	II, VI, VI (Trawl)	Argo-Rowley Terrace Marine Park covers an area of 146,003 km ² , located ~270 km north-west of Broome, and extends to the limit of Australia's EEZ. The AMP is adjacent to the Mermaid Reef Marine Park and the WA Rowley Shoals Marine Park.	Argo-Rowley Marine Park is significant because it contains habitats, species and ecological communities associated with two bioregions: <ul style="list-style-type: none"> • Northwest Transition • Timor Province. It includes two KEFs: Canyons linking the Argo Abyssal Plain with the Scott Plateau; and Mermaid Reef and Commonwealth waters surrounding Rowley Shoals. The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include resting and breeding habitat for seabirds and a migratory pathway for the pygmy blue whale.
Mermaid Reef Marine Park	-	✓	-	II	Mermaid Reef Marine Park covers an area of 540 km ² , located ~280 km north-west of Broome, adjacent to the Argo-Rowley Terrace Marine Park and ~13 km from the WA Rowley Shoals Marine Park. Mermaid Reef is one of three reefs forming the Rowley Shoals. The other two are Clerke Reef and Imperieuse Reef, to the	Mermaid Reef Marine Park is significant because it contains habitats, species and ecological communities associated with the Northwest Transition. It includes one KEF: Mermaid Reef and Commonwealth waters surrounding Rowley Shoals. The Rowley Shoals have been described as the best geological examples of shelf atolls in Australian waters. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding habitat for seabirds and a migratory pathway for the pygmy blue whale.

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
					south-west of the AMP, which are included in the WA Rowley Shoals Marine Park.	
Roebuck Marine Park	-	✓	-	VI	Roebuck Marine Park covers an area of 304 km ² , located ~12 km offshore of Broome, and is adjacent to the WA Yawuru Nagulagun/Roebuck Bay Marine Park.	Roebuck Marine Park is significant because it contains habitats, species and ecological communities associated with the Northwest Shelf Province and consists entirely of shallow continental shelf habitat. The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding and resting habitat for seabirds, foraging and internesting habitat for marine turtles, a migratory pathway for humpback whales and foraging habitat for dugong.
Kimberley Marine Park	✓	✓	-	II, IV, VI	Kimberley Marine Park covers an area of 74,469 km ² , located ~100 km north of Broome, extending from the WA State waters boundary north from the Lacepede Islands to the Holothuria Banks offshore from Cape Bougainville.	Kimberley Marine Park is significant because it includes habitats, species and ecological communities associated with three bioregions: <ul style="list-style-type: none"> • Northwest Shelf Province • Northwest Shelf Transition • Timor Province. It includes two KEFs: Ancient coastline at 125 m depth contour; and Continental slope demersal fish communities. The AMP supports a range of species, including protected species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding and foraging habitat for seabirds, internesting and nesting habitat for marine turtles, breeding, calving and foraging habitat for inshore dolphins, calving, migratory pathway and nursing habitat for humpback whales, migratory pathway for pygmy blue whales, foraging habitat for dugong and foraging habitat for whale sharks.
Ashmore Reef Marine Park	✓	-	-	Ia, IV	Ashmore Reef Marine Park covers an area of 583 km ² , located ~630 km north of	Ashmore Reef Marine Park is significant because it includes habitats, species and ecological communities associated with the Timor Province. It includes two KEFs:

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
					Broome and 110 km south of the Indonesian island of Roti. The AMP is located in Australia's External Territory of Ashmore and Cartier Islands and is within an area subject to a Memorandum of Understanding (MoU) between Indonesia and Australia, known as the MoU Box.	Ashmore Reef and Cartier Island and surrounding Commonwealth waters; and Continental slope demersal fish communities. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding, foraging and resting habitat for seabirds, resting and foraging habitat for migratory shorebirds, foraging, mating, nesting and internesting habitat for marine turtles, foraging habitat for dugong, and a migratory pathway for pygmy blue whales.
Cartier Island Marine Park	✓	-	-	Ia	Cartier Island Marine Park covers an area of 172 km ² , located ~45 km south-east of Ashmore Reef Marine Park and 610 km north of Broome. It is also located in Australia's External Territory of Ashmore and Cartier Islands and within an area subject to an MoU between Indonesia and Australia, known as the MoU Box.	Cartier Island Marine Park is significant because it includes habitats, species and ecological communities associated with the Timor Province. It includes two key ecological features: Ashmore Reef and Cartier Island and surrounding Commonwealth waters and continental slope demersal fish communities. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding and foraging habitat for seabirds, internesting, nesting and foraging habitat for marine turtles and foraging habitat for whale sharks. The AMP is also internationally significant for its abundance and diversity of sea snakes, some of which are listed species under the EPBC Act.
Joseph Bonaparte Gulf Marine Park	✓	-	-	VI	Joseph Bonaparte Gulf Marine Park covers an area of 8597 km ² and is located ~15 km west of Wadeye, NT, and ~90 km north of Wyndham, WA, in the Joseph Bonaparte Gulf.	Joseph Bonaparte Gulf Marine Park is significant because it contains habitats, species and ecological communities associated with the Northwest Shelf Transition bioregion. It includes one KEF: Carbonate bank and terrace system of the Sahul Shelf. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under

Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
					It is adjacent to the WA North Kimberley Marine Park. The Joseph Bonaparte Gulf Marine Park is located within both the NWMR and NMR.	the EPBC Act. BIAs within the AMP include foraging habitat for marine turtles and the Australian snubfin dolphin.
Oceanic Shoals Marine Park	✓	-	-	II, IV, VI	Oceanic Shoals Marine Park covers an area of 71,743 km ² and is located west of the Tiwi Islands, ~155 km north-west of Darwin, NT and 305 km north of Wyndham, WA. The Oceanic Shoals Marine Park is located within both the NWMR and NMR.	Oceanic Shoals Marine Park is significant because it contains habitats, species and ecological communities associated with the Northwest Shelf Transition bioregion. It contains four KEFs: Carbonate bank and terrace systems of the Van Diemen Rise; Carbonate bank and terrace systems of the Sahul Shelf; Pinnacles of the Bonaparte Basin; and Shelf break and slope of the Arafura Shelf. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging and interesting habitat for marine turtles.
State Marine Parks and Reserves						
North Kimberley Marine Park	✓	-	-	Sanctuary, Special Purpose and General Use Zones	The North Kimberley Marine Park covers approx. 18,450 km ² with its south-western boundary located ~270 km north-east of Derby.	The coral reefs of the north Kimberley have the greatest diversity in Western Australia and are some of the most pristine and remarkable reefs in the world. The park surrounds more than 1000 islands and is home to listed species such as dugongs, marine turtles, and sawfishes (DPAW, 2016a).
Lalang-garram / Horizontal Falls Marine Park and North Lalang-garram Marine Park (jointly managed)	✓	-	-	Sanctuary, Special Purpose and General Use Zones	The Lalang-garram / Horizontal Falls Marine Park covers ~3530 km ² from Talbot Bay in the west and Glenelg River in the east. The North Lalang-garram Marine Park covers ~1100	The Lalang-garram / Horizontal Falls Marine Park's most celebrated attraction is created by massive tides of up to 10 m and narrow gaps in two parallel tongues of land meaning the tide falls faster than the water can escape, producing 'horizontal falls'. There are also islands with fringing coral reefs and mangrove-lined creeks and bays. The North Lalang-garram Marine Park has a number of islands fringed with coral reef and has been identified as an

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
					km ² between Camden Sound and North Kimberley Marine Parks.	ecological hotspot and supports more than 1% of the world's population of brown boobies, with up to 2000 breeding pairs. About 500 pairs of crested terns also nest on the island (DPAW, 2016b).
Lalang-garram / Camden Sound Marine Park	✓	-	-	Sanctuary, Special Purpose and General Use Zones	Lalang-garram / Camden Sound Marine Park covers 7050 km ² located about 150 km north of Derby.	The Lalang-garram / Camden Sound Marine Park is the most important humpback whale nursery in the Southern Hemisphere. It also features the spectacular coastal Montgomery Reef. The marine park is home to six species of threatened marine turtle. Australian snubfin and Indo-Pacific humpback dolphins, dugongs, saltwater crocodiles, and several species of sawfish (DPAW, 2013).
Rowley Shoals Marine Park	-	✓	-	Sanctuary, Recreation and General Use Zones	The Rowley Shoals comprise of three reef systems, Mermaid Reef, Clerke Reef and Imperieuse Reef, all 30-40 km apart. These reef systems are located ~300 km west north-west of Broome.	The three coral atolls of the Rowley Shoals Marine Park comprise of shallow lagoons inhabited by diverse corals and abundant marine life, each covering around 80 km ² at the edge of Australia's continental shelf. Further offshore, the seafloor slopes away to the abyssal plain, some 6000 m below. Undersea canyons slice the slope; these features are commonly associated with diverse communities of deep-water corals and sponges and create localised upwellings that aggregate pelagic species like tunas and billfish (DEC, 2007a).
Yawuru Nagulagun / Roebuck Bay Marine Park	-	✓	-	Special Purpose Zone	Yawuru Nagulagun / Roebuck Bay Marine Park is a series of intertidal flats lying on the coast to the south-east of Broome.	Roebuck Bay is an internationally significant wetland and one of the most important feeding grounds for migratory shorebirds in Australia. Australian snubfin and Australian humpback dolphins frequent the waters and humpback whales pass through on their annual migration. Flatback turtles nest on the shores and are found in the bay's waters with other sea turtle species. Seagrass and macroalgae communities provide food for protected species such as the dugong and flatback turtle (DPAW, 2016c).
Eighty Mile Beach Marine Park	-	✓	-	Sanctuary, Recreation, Special	Eighty Mile Beach Marine Park covers ~2000 km ² stretching across 220km of	Eighty Mile Beach Marine Park is one of the world's most important feeding grounds for small wading birds that migrate to the area each summer, travelling from countries

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	Browse	NWS/S	NW Cape			
				Purpose and General Use Zones	coastline between Port Hedland and Broome.	thousands of kilometres away. The marine park is a major nesting area for flatback turtles which are found only in northern Australia. Sawfishes, dugongs, dolphins and millions of invertebrates inhabit the sand and mud flats, seagrass meadows, coral reefs and mangroves (DPAW, 2014).
Montebello Islands Marine Park, Barrow Island Marine Park and Barrow Island Marine Management Area (jointly managed)	-	✓	-	Sanctuary, Recreation, General Use and Special Purpose Zones	The Montebello Islands Marine Park, Barrow Island Marine Park and Barrow Island Marine Management Area are located off the north-west coast of WA, ~1600 km north of Perth, and cover areas of ~583 km ² , 42 km ² and 1,147 km ² , respectively.	The Montebello/Barrow islands marine conservation reserves have very complex seabed and island topography, resulting in a myriad of different habitats subtidal coral reefs, macroalgal and seagrass communities, subtidal soft-bottom communities, rocky shores and intertidal reef platforms, which support a rich diversity of invertebrates and finfish. The reserves are important breeding areas for several species of marine turtles and seabirds, which use the undisturbed sandy beaches for nesting. Humpback whales migrate through the reserves and dugongs occur in the shallow warm waters (DEC, 2007b).
Ningaloo Marine Park and Muiron Islands Marine Management Area (jointly managed)	-	-	✓	Sanctuary, Recreation, General Use and Special Purpose Zones	The Ningaloo Marine Park and Muiron Islands Marine Management Area are located off the North-west Cape of WA, ~1200 km north of Perth, and cover areas of ~2633 km ² and 286 km ² , respectively.	Ningaloo Reef is the largest fringing coral reef in Australia. Temperate and tropical currents converge in the Ningaloo region resulting in highly diverse marine life including spectacular coral reefs, abundant fishes and species with special conservation significance such as turtles, whale sharks, dugongs, whales and dolphins. The region has diverse marine communities including mangroves, algae and filter-feeding communities and has high water quality. These values contribute to the Ningaloo Marine Park being regarded as the State's premier marine conservation icon. The Muiron Islands Marine Management Area is also important, containing a very diverse marine environment, with coral reefs, filter-feeding communities and macroalgal beds. In addition, the Islands are important seabird and green turtle nesting areas. (CALM, 2005a).

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
Shark Bay Marine Park and Hamelin Pool Marine Nature Reserve (jointly managed)	-	-	✓	Sanctuary, Recreation, General Use and Special Purpose Zones	The Shark Bay Marine Park and Hamelin Pool Marine Nature Reserves are located 400 km north of Geraldton, covering areas of ~7487 km ² and 1270 km ² , respectively.	Seagrass covers over 4000 km ² of the Shark Bay Marine Park, with 12 different species making it one of the most diverse seagrass assemblages in the world. Dugongs regularly use this habitat, with the bay containing one of the largest dugong populations in the world. Humpback whales also use the bay as a staging post in their migration along the coast. Green and loggerhead turtles occur in the bay with Dirk Hartog Island providing the most important nesting site for loggerheads in Western Australia. Hamelin Pool contains the most diverse and abundant examples of stromatolites found in the world. These are living representatives of stromatolites that existed some 3500 million years ago (CALM, 1996).

*Conservation objectives for IUCN categories include:

Ia: Strict Nature Reserve

Ib: Wilderness Area

II: national Park

III: Natural Monument or Feature

IV: Habitat/Species Management Area

V: Protected Landscape

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

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

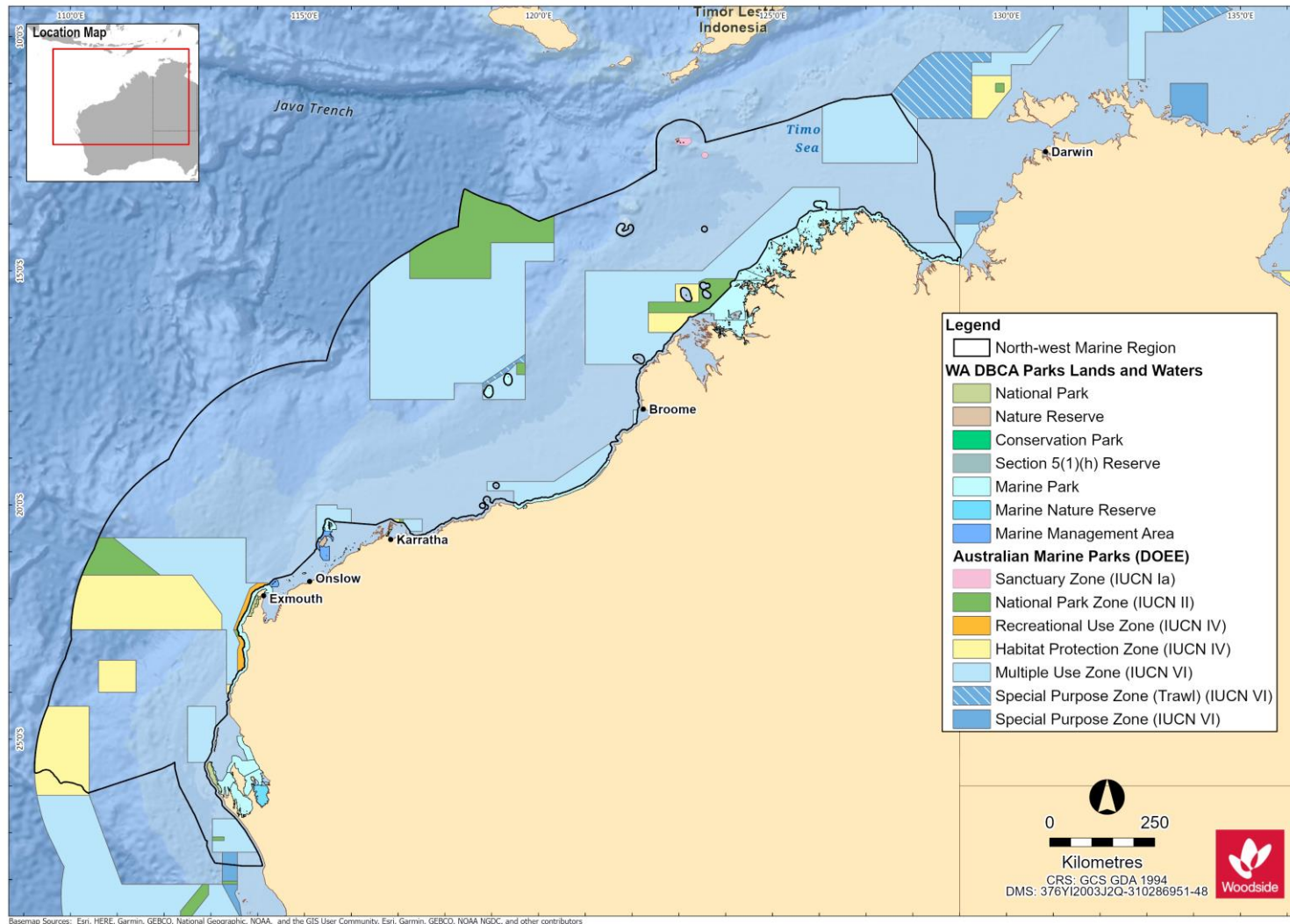


Figure 10-1 Commonwealth and State Marine Protected Areas for the NWMR

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10.10 Summary of Protected Areas within the SWMR

Table 10-2 Protected Areas within the SWMR

Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
World Heritage Properties			
N/A			
National Heritage Places - Natural			
N/A			
Commonwealth Heritage Places - Natural			
N/A			
Wetlands of International Importance (Ramsar)			
Beecher Point Wetlands	Ramsar	Beecher Point Wetlands is a system of about sixty small wetlands located near Rockingham in south-west WA, covering an area of around 7 km ² . The site was listed under the Ramsar Convention in 2001.	The wetlands support sedgeland, herbland, grassland, open-shrubland and low open-forest. The sedgelands that occur within the linear wetland depressions of the Ramsar site are a nationally listed TEC. At least four species of amphibians and twenty-one (21) species of reptiles have been recorded on the site. The site also supports the southern brown bandicoot. The site meets criteria 1 and 2 of the Ramsar Convention.
Forrestdale and Thomsons Lakes	Ramsar	Forrestdale Lake is located in the City of Armadale and Thomsons Lake is located in the City of Cockburn both of which lie within the southern Perth metropolitan area, in Western Australia. The site was listed under the Ramsar Convention in 1990.	The lakes are surrounded by medium density urban development and some agricultural land. The sediments of Thomsons Lake are between 30,000 and 40,000 years old, which are the oldest lake sediments discovered in WA to date. These lakes are the best remaining examples of brackish, seasonal lakes with extensive fringing sedgeland, typical of the Swan Coastal Plain. The site meets criteria 1, 3, 5 and 6 of the Ramsar Convention.
Peel-Yalgorup System	Ramsar	Peel-Yalgorup System, located adjacent to the City of Mandurah in	Peel-Yalgorup System Ramsar site is the most important area for waterbirds in south-western Australia. It supports a large number of waterbirds, and a

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Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
		WA, is a large and diverse system of shallow estuaries, coastal saline lakes and freshwater marshes. The site was listed under the Ramsar Convention in 1990.	wide variety of waterbird species. It also supports a wide variety of invertebrates, and estuarine and marine fish. The site meets criteria 1, 3, 5 and 6 of the Ramsar Convention.
Vasse-wonnerup system	Ramsar	Vasse-Wonnerup System Ramsar wetland is situated in the Perth Basin, south-western WA. The site was listed under the Ramsar Convention in 1990.	Vasse-Wonnerup System is an extensive, shallow, nutrient-enriched wetland system of highly varied salinities. Large areas of the wetland dry out in late summer. Vasse-Wonnerup System supports tens of thousands of resident and migrant waterbirds of a wide variety of species. More than 80 species of waterbird have been recorded in the System such as red-necked avocets and black-winged stilts, wood sandpiper, sharp-tailed sandpiper, long-toed stint, curlew sandpiper and common greenshank. Thirteen waterbird species are also known to breed at the Ramsar site, including the largest regular breeding colony of black swans in south-western Australia. The site meets criteria 5 and 6 of the Ramsar Convention.
Wetlands of National Importance (DAWE, 2019)			
Rottneest Island Lakes		The Rottneest Island Lakes site is the cluster of 18 lakes and swamps on the north-east part of Rottneest Island.	An outstanding example of a series of lakes/swamps of varied depth and salinity located on an offshore island; the only island among 200 plus in WA exceeding 10 ha in area, that has a salt-lake complex; the only known example of seasonally meromictic lakes in Australia. The area meets criteria 1, 2, 3 and 6 for inclusion on the Directory of Important Wetlands in Australia.
Australian Marine Parks (DNP, 2018b)			
Abrolhos Marine Park	II, IV, VI	The Abrolhos Marine Park is located within both the NWMR and SWMR. Refer Table 10-1 for description and conservation values.	
Bremer Marine Park	II, VI	Bremer Marine Park covers an area of 4472 km ² and is located approximately half-way between Albany and Esperance, offshore from the Fitzgerald River National Park, extending from the WA State waters boundary.	Bremer Marine Park is significant because it contains habitats, species and ecological communities associated with two bioregions: <ul style="list-style-type: none"> • Southern Province • South-west Shelf Province. It includes two KEFs: Albany Canyon group and adjacent shelf break; and Ancient coastline at 90-120 m depth.

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Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
			The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds, Australian sea lions, and white sharks, a migratory pathway for humpback whales, and a significant calving area for southern right whales. The AMP includes canyons—important aggregation areas for killer whales.
Eastern Recherche Marine Park	II, VI	Eastern Recherche Marine Park covers an area of 20,575 km ² and is located ~135 km east of Esperance, adjacent to the Recherche Archipelago, close to the WA Cape Arid National Park.	Eastern Recherche Marine Park is significant because it contains habitats, species and ecological communities associated with three bioregions: <ul style="list-style-type: none"> • South-west Shelf Province • Southern Province • Great Australian Bight Shelf Transition. It includes three KEFs: Mesoscale eddies; Ancient coastline at 90-120 m depth; and Commonwealth marine environment surrounding the Recherche Archipelago. <p>The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds, Australian sea lions and white sharks, and a calving buffer area for southern right whales.</p>
Geographe Marine Park	II, IV, VI	Geographe Marine Park covers an area of 977 km ² and is located in Geographe Bay, ~8 km west of Bunbury and 8 km north of Busselton, adjacent to the WA Ngari Capes Marine Park.	Geographe Marine Park is significant because it contains habitats, species and ecological communities associated with the South-west Shelf Province bioregion. <p>It includes two KEFs: Commonwealth marine environment within and adjacent to Geographe Bay; and Western rock lobster.</p> <p>The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds, a migratory pathway for humpback and pygmy blue whales, and a calving buffer area for southern right whales.</p>
Great Australian Bight Marine Park	II, VI	Great Australian Bight Marine Park covers an area of 45,822 km ² and is located ~12 km south-east of Eucla and 174 km west of Ceduna, adjacent to the SA Far West Coast and Nuyts Archipelago Marine Parks.	Great Australian Bight Marine Park is significant because it contains habitats, species and ecological communities associated with two bioregions: <ul style="list-style-type: none"> • Great Australian Bight Shelf Transition • Southern Province. <p>It includes three KEFs: Ancient coastline at 90-120 m depth; Benthic invertebrate communities of the eastern Great Australian Bight; and Small pelagic fish of the South-west Marine Region.</p> <p>The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds, Australian sea lions, white sharks and</p>

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Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
			pygmy blue and sperm whales, and a calving area, migratory pathway and large aggregation area for southern right whales.
Jurien Marine Park	II, VI	Jurien Marine Park covers an area of 1851 km ² and is located ~148 km north of Perth and 155 km south of Geraldton, adjacent to the WA Jurien Bay Marine Park.	<p>Jurien Marine Park is significant because it includes habitats, species and ecological communities associated with two bioregions:</p> <ul style="list-style-type: none"> • South-west Shelf Transition • Central Western Province. <p>It includes three KEFs: Ancient coastline at 90-120 m depth; Demersal slope and associated fish communities of the Central Western Province; and Western rock lobster</p> <p>The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds, Australian sea lions and white sharks, and a migratory pathway for humpback and pygmy blue whales.</p>
Perth Canyon Marine Park	II, IV, VI	Perth Canyon Marine Park covers an area of 7409 km ² and is located ~52 km west of Perth and ~19 km west of Rottnest Island.	<p>Perth Canyon Marine Park is significant because it includes habitats, species and ecological communities associated with four bioregions:</p> <ul style="list-style-type: none"> • Central Western Province • South-west Shelf Province • Southwest Transition • South-west Shelf Transition. <p>It includes four KEFs: Perth Canyon and adjacent shelf break, and other west-coast canyons; Demersal slope and associated fish communities of the Central Western Province; Western rock lobster; and Mesoscale eddies.</p> <p>The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds, Antarctic blue, pygmy blue and sperm whales, a migratory pathway for humpback, Antarctic blue and pygmy blue whales, and a calving buffer area for southern right whales.</p>
South-west Corner Marine Park	II, IV, VI	South-west Corner Marine Park covers an area of 271,833 km ² and is located adjacent to the WA Ngari Capes Marine Park. It covers an extensive offshore area that is closest to WA State waters ~48 km west of Esperance, 73 km west of Albany and 68 km west of Bunbury.	<p>South-west Corner Marine Park is significant because it contains habitats, species and ecological communities associated with three bioregions:</p> <ul style="list-style-type: none"> • Southern Province • South-west Transition • South-west Shelf Province. <p>It includes six KEFs: Albany Canyon group and adjacent shelf break; Cape Mentelle upwelling; Diamantina Fracture Zone; Naturaliste Plateau; Western rock lobster; and Ancient coastline at 90 m-120 m depth.</p>

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Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
			The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds, Australian sea lions, white sharks and sperm whales, a migratory pathway for Antarctic blue, pygmy blue and humpback whales, and a calving buffer area for southern right whales.
Twilight Marine Park	II, VI	Twilight Marine Park covers an area of 4641 km ² and is located ~245 km south-west of Eucla and 373 km north-east of Esperance, adjacent to the WA State waters boundary.	Twilight Marine Park is significant because it contains habitats, species and ecological communities associated with the Great Australian Bight Shelf Transition bioregion. The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds, Australian sea lions and white sharks, and a calving buffer area for southern right whales.
Two Rocks Marine Park	II, VI	Two Rocks Marine Park covers an area of 882 km ² and is located ~25 km north-west of Perth, to the north-west of the WA Marmion Marine Park.	Two Rocks Marine Park is significant because it includes habitats, species and ecological communities associated with the South-west Shelf Transition bioregion. It includes three KEFs: Commonwealth marine environment within and adjacent to the west-coast inshore lagoons; Western rock lobster; and Ancient coastline at 90-120 m depth. The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds and Australian sea lions, a migratory pathway for humpback and pygmy blue whales, and a calving buffer area for southern right whales.
State Marine Parks and Reserves			
Jurien Bay Marine Park	Sanctuary, Special Purpose and General Use Zones.	The Jurien Bay Marine Park is located on the central west coast of WA ~200 km north of Perth and covers an area of 824 km ² .	An extensive limestone reef system parallel to the shore has created a huge shallow lagoon that provides perfect habitat for Australian sea lions, dolphins and a myriad of juvenile fish. Extensive seagrass meadows inside the reef shelter many marine animals such as western rock lobsters, octopus and cuttlefish that make up the diet of young sea lions. The marine park also surrounds dozens of ecologically important islands that contain rare and endangered animals found nowhere else in the world (CALM, 2005b).
Marmion Marine Park	Sanctuary, Recreation and Special Use Zones.	The Marmion Marine Park lies within State waters between Trigg Island and Burns Beach and encompasses a coastal area of ~95 km ² . Marmion	The marine park has a number of sanctuary zones including Little Island, The Lumps and the Boyinaboat Reef protecting a variety of habitats from limestone reefs, seagrass beds and clear shallow lagoons that support a diversity of marine life. In addition, to a general use zone and the Waterman Recreation Area. The marine park contains important habitat for the endemic Australian

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Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
		Marine Park was the State's first marine park, declared in 1987.	sea lion, an array of seabird species migratory whales are regular visitors (CALM, 1992; DPAW, 2016d).
Swan Estuary Marine Park	Special Purpose and Nature Reserve Zones.	Three biologically important areas of Perth's Swan River make up the Swan Estuary Marine Park, including Alfred Cove, Pelican Point and Crawley. These three sites cover a total area of 3.4 km ² .	The sand flats, mud flats and beaches at the three locations of the Swan Estuary Marine Park provide the only remaining significant feeding and resting areas in the Swan Estuary, for trans-equatorial migratory wading and waterbirds. The Park and adjacent reserves also provide habitat for a diverse assemblage of aquatic and terrestrial flora and fauna (CALM, 1999).
Shoalwater Islands Marine Park	Sanctuary, Special Purpose and General Use Zones.	The Shoalwater Islands Marine Park is located adjacent to Rockingham on the south-west coast of WA, ~50 km south of Perth and covers an area of ~66 km ² .	The Shoalwater Islands Marine Park consists of a complex seabed and coastal topography consisting of islands, limestone ridges and reef platforms, protected inshore areas and deeper basins, sandbars and beaches, and is home to five species of cetacean and 14 species of sea and shore bird. The waters of the marine park are also used to access feeding grounds for the little penguin (<i>Eudyptula minor</i>) colony on Penguin Island, which is close to the northernmost limit of the species' range and is the largest known breeding colony in Western Australia (DEC, 2007c).
Ngari Capes Marine Park	Sanctuary, Special Purpose and Recreation Zones.	The Ngari Capes Marine Park is located off the south-west coast of WA, ~250 km south of Perth, covering ~1238 km ² .	The Ngari Capes Marine Park consists of a complex arrangement of sandy bays, high energy limestone and granite reefs bordered by headlands and cliffs and two weathered capes. Coral communities consist of both tropical and temperate species. Cetaceans and pinnipeds are resident in and/or transient through the marine park as well as a diverse range of seabirds and shorebirds (DEC, 2013).
Walpole and Nornalup Inlets Marine Park	Recreation Zone.	The Walpole and Nornalup Inlets Marine Park is located adjacent to the towns of Walpole and Nornalup on the south coast of WA, ~120 km west of Albany, and covers ~14 km ² .	The Walpole and Nornalup Inlets Marine Park consists of a geologically complex lagoonal estuarine system comprising three significant rivers and two connected inlets that are permanently open to the ocean. Approximately 40 marine and estuarine finfish species commonly inhabit the inlet system, as well as a variety of shark and ray species and numerous seabirds and shorebirds. The sandy beaches and shoreline vegetation of the inlet system are of high ecological and social importance to the marine park (DEC, 2009).

*Conservation objectives for IUCN categories include:

Ia: Strict Nature Reserve

Ib: Wilderness Area

II: national Park

III: Natural Monument or Feature

IV: Habitat/Species Management Area

V: Protected Landscape

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

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

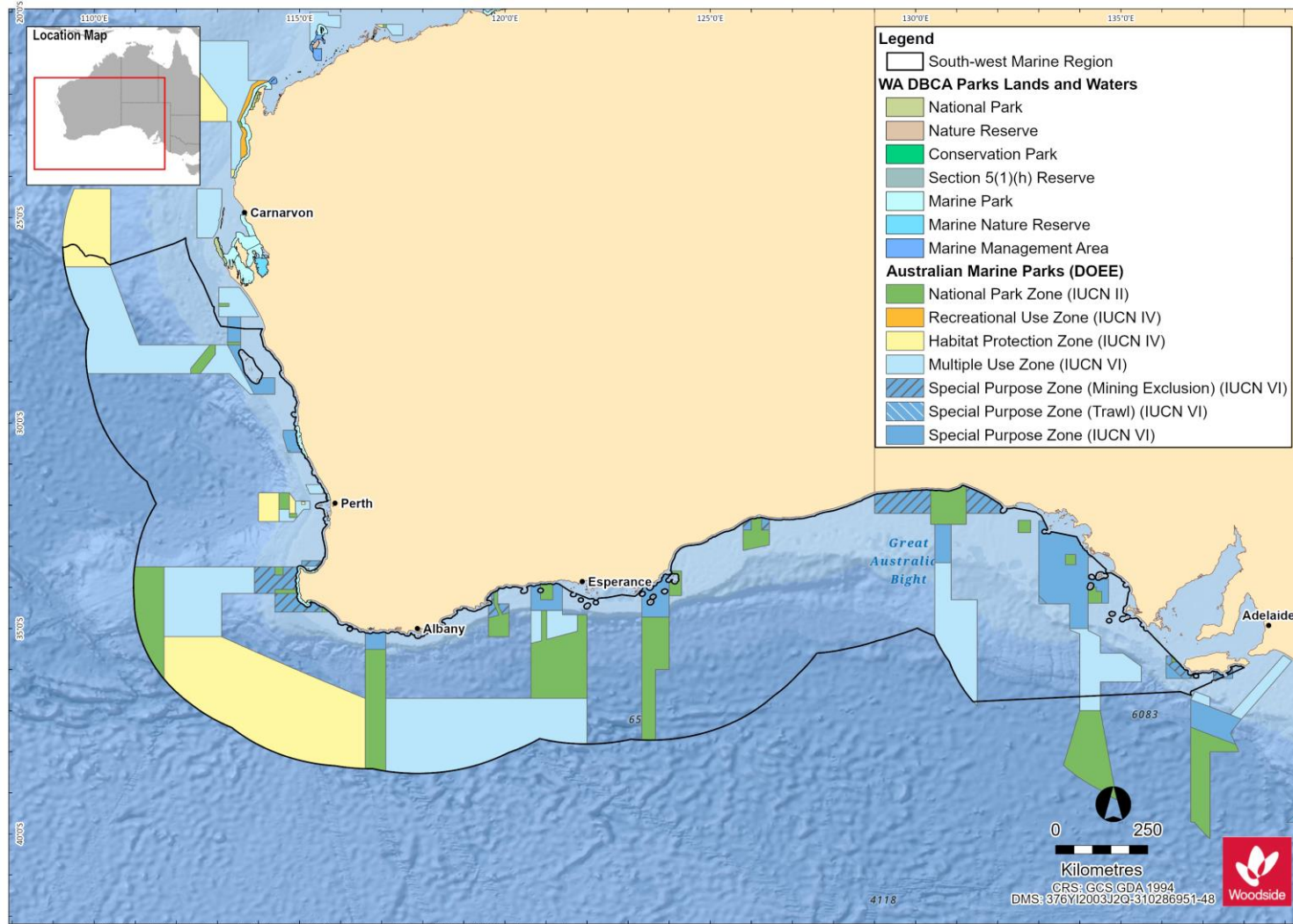


Figure 10-2. Commonwealth and State Marine Protected Areas for the SWMR

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10.11 Summary of Protected Areas within the NMR

Table 10-3 Protected Areas within the NMR

Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
World Heritage Properties			
Kakadu National Park		Kakadu National Park is a living landscape with exceptional natural and cultural values. It is the largest National Park in Australia and preserves the greatest variety of ecosystems on the Australian continent including extensive areas of floodplains, mangroves, tidal mudflats, coastal areas and monsoon forests. The park was inscribed the World Heritage list in three stages over 11 years. It is located in tropical north Australia covering a total area of 19,804 square kilometres.	The conservation values reflect the WHA Criterion: (i), (vi), (vii) and (ix): Natural features relate to Criterion (vii) – the remarkable contrast between the internationally recognised Ramsar-listed wetlands and the spectacular rocky escarpment and its outliers and Criterion (ix) – four major river systems of tropical Australia and floodplains that are dynamic environments, shaped by changing sea levels and big floods every wet season. These floodplains illustrate the ecological and geomorphological effects that have accompanied Holocene climate change and sea level rise. Kakadu National Park contains important and significant habitats supporting a diverse range of flora and fauna.
National Heritage Places - Natural			
Kakadu National Park		Refer to World Heritage property description above.	Refer to World Heritage property conservation values above
Commonwealth Heritage Places - Natural			
N/A			
Wetlands of International Importance (Ramsar)			
Kakadu National Park		Australian Ramsar site number 2. The stage 1 and 2 Ramsar sites, established in 1980, 1985 and 1989, respectfully were combined into a single Ramsar site in 2010.	The Kakadu National Park Ramsar site straddles the western edge of the Arnhem Land Plateau encompassing a range of landforms and extensive floodplains. It is a mosaic of contiguous wetlands comprising the catchments of two large river systems, the East and South Alligator rivers and encompasses extensive tidal mudflat areas. It is an internationally important site for migratory shorebirds as part of the EAAF.
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Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
Cobourg Peninsula		Australian Ramsar site number 1 established in 1974. This Ramsar site includes freshwater and extensive intertidal areas but excludes subtidal areas. It is in a remote location and there has been minimal human impact on the site.	The wetlands encompassed in the Ramsar site are some of the better protected and near-natural wetlands in the bioregion and there is a diverse array of wetland in a confined area. The site supports important turtle nesting habitat and habitat for coastal dolphin species and is an internationally significant migratory shorebird habitat as part of the EAAF and an important location for seabird breeding colonies.
Wetlands of National Importance (DAWE, 2019)			
Southern Gulf Aggregation		The site is a complex continuous wetland aggregation in the Gulf of Carpentaria, covering an area of ~5460 km ² located 58 km east of Burketown, Queensland.	The Southern Gulf Aggregation is the largest continuous estuarine wetland aggregation of its type in northern Australia. It is one of the three most important areas for shorebirds in Australia. The area meets criteria 1, 2, 3, 4, 5 and 6 for inclusion on the Directory of Important Wetlands in Australia.
Australian Marine Parks (DNP, 2018c)			
Arafura Marine Park	VI	Arafura Marine Park covers an area of 22,924 km ² is located ~256 km north-east of Darwin and 8 km offshore of Croker Island, NT. It extends from NT waters to the limit of Australia's EEZ.	The AMP is significant because it contains habitats, species and ecological communities associated with two bioregions: <ul style="list-style-type: none"> •Northern Shelf Province •Timor Transition. It includes one KEF: Tributary canyons of the Arafura Depression. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include interesting habitat for marine turtles and important foraging and breeding habitat for seabirds.
Arnhem Marine Park	VI	Arnhem Marine Park covers an area of 7125 km ² and is located ~100 km south-east of Croker Island and 60 km south-east of the Arafura Marine Park. It extends from NT waters surrounding the Goulburn Islands, to the waters north of Maningrida.	Arnhem Marine Park is significant because it contains habitats, species and ecological communities associated with the Northern Shelf Province bioregion. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat and a migratory pathway for marine turtles and seabirds.
Gulf of Carpentaria Marine Park	II, VI	Gulf of Carpentaria Marine Park covers an area of 23,771 km ² and is located ~90 km north-west of Karumba, Queensland and is adjacent to the Wellesley Islands in	Gulf of Carpentaria Marine Park is significant because it contains habitats, species and ecological communities associated with the Northern Shelf Province bioregion.

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Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
		the south of the Gulf of Carpentaria basin.	It includes four KEFs: Gulf of Carpentaria basin; Gulf of Carpentaria coastal zone; Plateaux and saddle north-west of the Wellesley Islands; and Submerged coral reefs of the Gulf of Carpentaria. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding and foraging areas for seabirds and interesting and foraging areas for turtles.
Joseph Bonaparte Gulf Marine Park	VI	The Joseph Bonaparte Gulf Marine Park is located within both the NWMR and NMR. Refer Table 10-1 for description and conservation values.	
Limmen Marine Park	IV	Limmen Marine Park covers an area of 1399 km ² and is located ~315 km south-west of Nhulunbuy, NT, in the south-west of the Gulf of Carpentaria. It extends from NT waters, between the Sir Edward Pellew Group of Islands and Maria Island in the Limmen Bight, adjacent to the NT Limmen Bight Marine Park.	Limmen Marine Park is significant because it contains habitats, species and ecological communities associated with the Northern Shelf bioregion. It includes one KEF: Gulf of Carpentaria coastal zone. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include interesting and foraging habitat for marine turtles.
Oceanic Shoals Marine Park	II, IV, VI	The Oceanic Shoals Marine Park is located within both the NWMR and NMR. Refer Table 10-1 for description and conservation values.	
Wessel Marine Park	IV, VI	Wessel Marine Park covers an area of 5908 km ² and is located ~22 km east of Nhulunbuy, NT. It extends from NT waters adjacent to the tip of the Wessel Islands to NT waters adjacent to Cape Arnhem.	Wessel Marine Park is significant because it contains habitats, species and ecological communities associated with the Northern Shelf bioregion. It includes one KEF: Gulf of Carpentaria basin. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding habitat for seabirds and interesting and foraging habitat for marine turtles.
West Cape York Marine Park	II, IV, VI	West Cape York Marine Park covers an area of 16,012 km ² and is located adjacent to the northern end	West Cape York Marine Park is significant because it contains species and ecological communities associated with two bioregions: • Northeast Shelf Transition

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Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
		of Cape York Peninsula ~25 km south-west of Thursday Island and 40 km north-west of Weipa, Queensland.	<ul style="list-style-type: none"> Northern Shelf Province. It includes two KEFs: Gulf of Carpentaria basin; and Gulf of Carpentaria coastal zone. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding and foraging habitat for seabirds, internesting and foraging habitat for marine turtles and dugong, and foraging, breeding and calving habitat for dolphins.
Territory Marine Parks and Reserves			
Cobourg Marine Park	II, IV, VI	Cobourg Marine Park covers an area of 2,290 km ² and is located in the waters surrounding the Cobourg Peninsula ~220 km north-east of Darwin. The Marine Park is part of the larger Garig Gunak Barlu National Park. Garig Gunak Barlu National Park includes both the Marine Park and the Cobourg Sanctuary.	Cobourg Marine Park is located in the Cobourg and Van Diemen Gulf marine bioregions with the northern portion of the Park covered by the Cobourg marine bioregion and the southern portion covered by the Van Diemen Gulf marine bioregion. The Marine Park is characterised by a number of deeply incised bays and estuaries on its northern shores. These bays are ancient river valleys that were drowned during periods of sea level rise and provide a varied environment and habitat that is quite distinct from the open water areas of the Park. The areas of the Park that have been studied and where extensive collections have been made indicates that the Park supports rich and diverse marine life including live coral reefs, seagrass, diverse reef and pelagic fish populations, marine turtles and dugong.

*Conservation objectives for IUCN categories include:

Ia: Strict Nature Reserve

Ib: Wilderness Area

II: National Park

III: Natural Monument or Feature

IV: Habitat/Species Management Area

V: Protected Landscape

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

IUCN categories for the marine park are provided and, in brackets, the IUCN categories for specific zones within each Marine Park as assigned under the North Marine Parks Network Management Plan 2018 (DNP, 2018c)

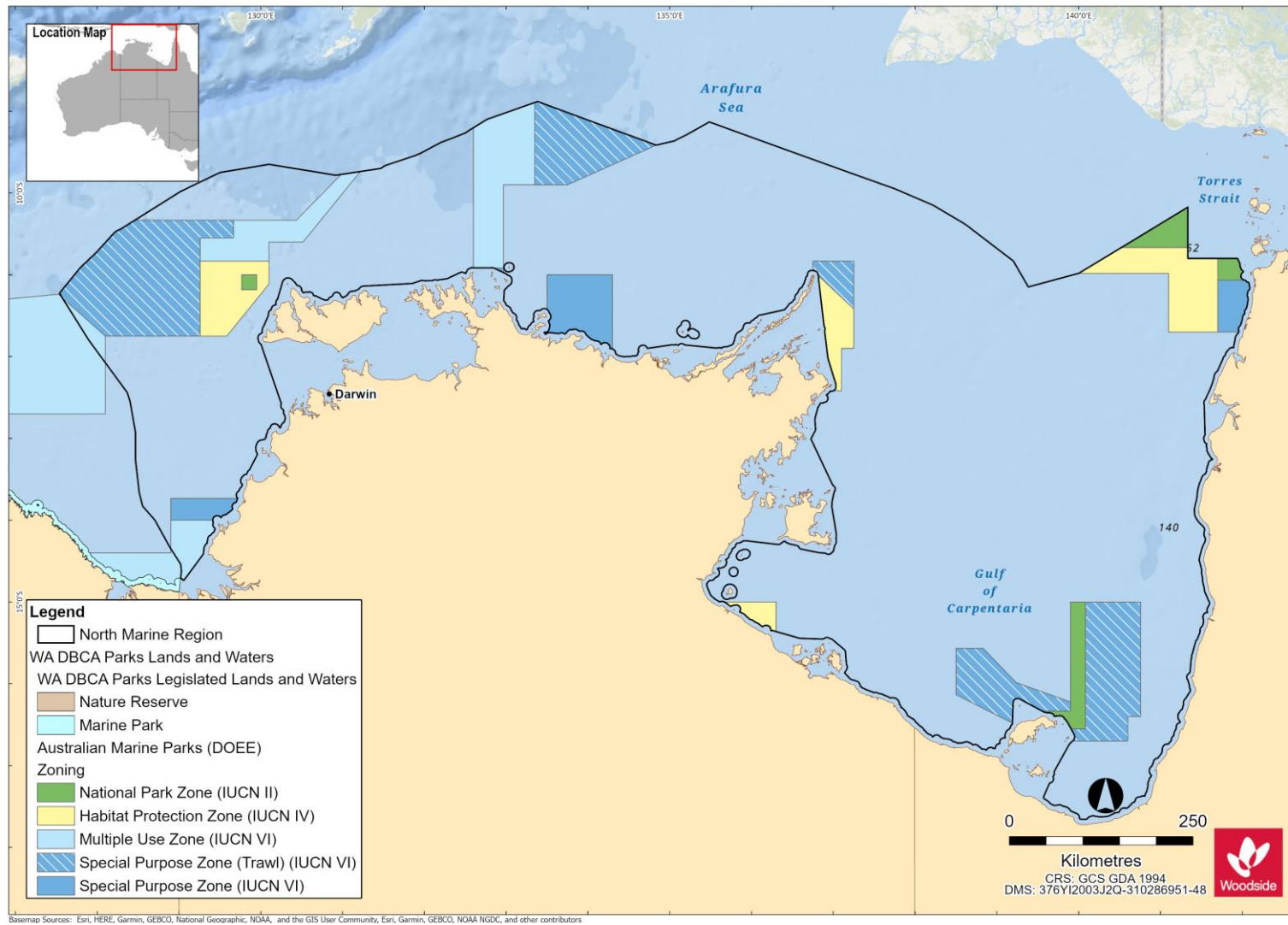


Figure 10-3. Commonwealth and State Marine Protected Areas within the NMR

11. SOCIO-ECONOMIC AND CULTURAL ENVIRONMENT

This section summarises the information relating to the socio-economic and cultural environment of the regions offshore Western Australia, with a focus on the NWMR and to a lesser extent the SWMR and NWR.

The cultural environment includes Indigenous and European heritage values, including underwater values such as historic shipwrecks. Socio-economic values include commercial and traditional fishing, tourism and recreation, shipping, oil and gas activities and defence activities.

11.1 Cultural Heritage

11.1.1 Indigenous Sites of Significance

Murujuga (the Burrup Peninsula) has a very high density of significant Indigenous heritage sites and places with tangible and intangible heritage values. The area has one of the largest, densest, and most diverse collections of rock art in the world. It is estimated that the peninsula and surrounding islands contain over a million petroglyphs (rock engravings) covering a broad range of styles and subjects. The landscape also contains quarries, middens, fish traps, rock shelters, ceremonial sites, artefact scatters, grinding patches and stone arrangements that evidence tens of thousands of years of human occupation. These places are linked to Aboriginal cosmology, Dreaming stories and songs through the stories, knowledge and customs that are still held by traditional custodians.

In 2007 the Dampier Archipelago (including the Burrup Peninsula) was included on the National Heritage List due to outstanding heritage values relating to Australia's cultural history contained in the large number, density, diversity, distribution and fine execution of rock art. Within the National Heritage Place, the Murujuga National Park covers 4913 ha and is co-managed by the Murujuga Aboriginal Corporation and the Department of Biodiversity, Conservation and Attractions. The Murujuga Cultural Landscape was also added to Australia's Tentative World Heritage List in 2020, with full World Heritage Listing anticipated in 2024.

Woodside also recognises the potential for heritage to survive in submerged landscapes. Sea-level rises since the last ice age mean that areas now under the sea were once exposed, that many of today's islands would have been connected to the mainland, and that Aboriginal people are highly likely to have inhabited these places. Woodside works with traditional custodians, academics and heritage professionals to identify tangible and intangible heritage values in the submerged landscape to avoid disturbing heritage where possible and to minimise impacts where heritage cannot be avoided.

It is an offence to excavate, destroy, damage, conceal or alter Indigenous heritage onshore or in state waters under section 17 of the *Aboriginal Heritage Act 1972 (WA) (AHA)* without ministerial authorisation. Where there is a risk of injury or desecration to a significant Aboriginal area, even where permitted under the AHA, any Aboriginal person may apply to the federal Environment Minister for a declaration under sections 9 or 10 of the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cth)* for the protection and preservation of that area.

The Department of Planning, Lands and Heritage maintains a register of registered sites and heritage places including middens, burial, ceremonial [sites], artefacts, rock shelters, mythological [sites] and engraving sites. There are over 1600 registered sites on Murujuga and the Dampier Archipelago with around 1100 other heritage places. This register is not comprehensive and will be complemented by heritage surveys where necessary. Protection of National and World Heritage values is also legislated through various provisions of the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)*. Murujuga National Park is managed under the *Conservation and Land Management Act 1984 (WA)*.

11.1.2 European Sites of Significance

European sites of significance and heritage value are found along adjacent foreshores of the SWMR, NWMR and NWR. Heritage values are protected in Western Australia under the *Heritage Act 2018*.

11.1.3 Underwater Cultural Heritage

Places of historic cultural significance are protected under Commonwealth, State and local regimes. Places inscribed on the National or World Heritage list are protected through various provisions of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth). Historic places may also be protected under the *Heritage Act 2018* (WA); under section 129 the prohibited alteration, demolition, damage, despoilment or removal of objects from a registered place may result in a fine of A\$1 million. Protection of heritage by local government typically emanates from local planning schemes produced under Part 5 of the *Planning and Development Act 2005* (WA).

The remains of vessels and aircraft in Commonwealth waters, along with any associated article, are automatically protected under the *Underwater Cultural Heritage Act 2018* (Cth) after 75 years. Remains and relics of any ship lost, wrecked or abandoned in Western Australian waters before 1900 are protected by the *Maritime Archaeology Act 1973* (WA).

The Australian National Shipwreck Database and the WA Maritime Museum Shipwreck Database list these protected wrecks.

11.1.4 National and Commonwealth Listed Heritage Places

Australia's National Heritage Sites are those of outstanding natural, historic and/or Indigenous significance to Australia. National Heritage places classed as natural are discussed in **Section 10.3**. Historic and/or Indigenous National Heritage Listed Places of the NWMR include:

- Dampier Archipelago (including Burrup Peninsula)
- Dirk Hartog Landing Site/Cape Inscription
- HMAS Sydney II and the HSK Kormoran Shipwreck Sites
- Batavia Shipwreck Site and Survivor Camps Area 1629 – Houtman Abrolhos

Commonwealth Heritage Places are a collection of sites recognised for their Indigenous, historical and/or natural values, which are owned or controlled by the Australian Government. A number of these sites are owned or controlled by the Department of Defence, as well as Government agencies relating to maritime safety, customs and communication. Commonwealth Heritage places classed as natural are discussed in **Section 10.3**. Listed Heritage Places in the NWMR include:

- Mermaid Reef – Rowley Shoals (refer **Section 10.3**)
- Ashmore Reef National Nature Reserve (refer **Section 10.3**)
- Scott Reef and Surrounds – Commonwealth Area (refer **Section 10.3**)
- Ningaloo Marine Area (refer **Section 10.3**)

World Heritage Properties are those sites that hold universal value which transcends any value they may be held by any one nation. These sites and their qualities are detailed in the Convention concerning the Protection of the World Cultural and Natural Heritage (the World Heritage Convention), to which Australia is a founding member. The Protected Matters Search Report (**Appendix A**) lists two natural World Heritage Properties in the NWMR (refer **Section 10.2**). There are no cultural heritage listings located within the NWMR.

Summary tables of heritage places for NWMR, SWMR and NMR are presented in **Table 11-1, Table 11-2** and **Table 11-3**.

11.2 Summary of Heritage Places within the NWMR

Table 11-1 Heritage Places (Indigenous and Historic) within the NWMR

Heritage Places	Woodside Activity Area			Class	Description	Conservation Values
	Browse	NWS/S	NW Cape			
National Heritage Properties						
Dampier Archipelago (including Burrup Peninsula)	-	✓	-	Indigenous	The Dampier Archipelago (including the Burrup Peninsula) contains one of the densest concentrations of rock engravings in Australia with some sites containing thousands or tens of thousands of images.	The rock engravings comprise images of avian, marine and terrestrial fauna, schematised human figures, figures with mixed human and animal characteristics and geometric designs. At a national level it has an exceptionally diverse and dynamic range of schematised human figures some of which are arranged in complex scenes. The fine execution and dynamic nature of the engravings, particularly some of the composite panels, exhibit a degree of creativity that is unusual in Australian rock engravings.
Dirk Hartog Landing Site 1616 – Cape Inscription Area	-	-	✓	Historic	Cape Inscription is the site of the oldest known landings of Europeans on the WA coastline.	The Cape Inscription area displays uncommon aspects of Australia's cultural history because of the cumulative effect its association with these explorers and surveyors had on growing knowledge of the great southern continent in Europe. The association of the site with these early navigators stimulated the development of the European view of the great southern continent at a time when they began to look at the world with a modern scientific outlook.
Commonwealth Heritage Properties						
N/A						

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11.3 Summary of Heritage Places within the NMR

Table 11-2 Heritage Places (Indigenous and Historic) within the NMR

Heritage Places	Class	Description	Conservation Values
National Heritage Properties			
None			
Commonwealth Heritage Properties			
None			

11.4 Summary of Heritage Places within the SWMR

Table 11-3 Heritage Places (Indigenous and Historic) within the SWMR

Heritage Places	Class	Description	Conservation Values
National Heritage Properties			
Cheetup Rock Shelter	Indigenous	Cheetup meaning “place of the birds” is the name of a spacious rock shelter located in Cape Le Grand National Park, about 55 km east of Esperance in WA. Aboriginal people associated with the place identify themselves as Nyungar/Noongar, Ngadju (shortened from Ngadjunmaia) or Mirning.	Cheetup rock shelter provides outstanding evidence for the antiquity of processing and use of cycad seeds by Aboriginal people. The seeds of the cycad are extremely toxic and can cause speedy death if eaten fresh without proper preparation to remove the toxins. The presence of <i>Macrozamia riedlei</i> seeds in a pit lined with Xanthorrhoea (grass tree) leaf bases indicates that the Aboriginal people in the Esperance region had the knowledge to remove the toxins of this important source of carbohydrate and protein at least 13,200 years ago.

Heritage Places	Class	Description	Conservation Values
Batavia Shipwreck Site and Survivor Camps Area 1629 – Houtman Abrolhos	Historic	The Batavia and its associated sites hold an important place in the discovery and delineation of the WA coastline. The wreck of the Batavia, and other Dutch ships like her, convinced the VOC (Dutch East India Company) of the necessity of more accurate charts of the coastline and resulted in the commissioning of Vlamingh's 1696 voyage.	Because of its relatively undisturbed nature the archaeological investigation of the wreck itself has revealed a range of objects of considerable value as well as to artefact specialists and historians.
HMAS Sydney II and HSK Kormoran Shipwreck Sites	Historic	The naval battle fought between the Australian warship HMAS Sydney II and the German commerce raider HSK Kormoran off the WA coast during World War II was a defining event in Australia's cultural history. HMAS Sydney II was Australia's most famous warship of the time and this battle has forever linked the stories of these warships to each other. The loss of HMAS Sydney II along with its entire crew of 645 following the battle with HSK Kormoran, remains as Australia's worst naval disaster.	The shipwreck sites of HMAS Sydney II and HSK Kormoran have outstanding heritage value to the nation because of their importance in a defining event in Australia's cultural history and for their part in development of the process of the defence of Australia.
Commonwealth Heritage Properties			
Cliff Point Historic Sites	Historic	Cliff Head is a limestone bluff on the east coast of Garden Island. Evidence of occupation has been reported from the beach just north of the head, the immediate hinterland, the ridge above and on the south face of the ridge.	The Cliff Point Historic Site, individually significant within the area of Garden Island is important as the first site inhabited by Governor Stirling's party in 1829 when founding the colony of WA, and as WA's first official non-convict settlement. The site was occupied in the first instance by Captain Charles Fremantle before the arrival of Captain Stirling. The party occupied the site for two months before a move was made to the Swan River settlement on the mainland.
HMAS Sydney II and HSK Kormoran Shipwreck Sites	Historic	As above	As above
J Gun Battery	Historic	J Battery comprised two 155 mm long range guns, the other similar battery being at Cape Peron on the mainland at the entrance to Cockburn Sound. Located in the dune systems at the north western	J Gun Battery (1942) is individually significant within the area of Garden Island (Register No. 019544) and is historically important as the first gun battery constructed on Garden Island and as one of two long range gun batteries which played a

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Heritage Places	Class	Description	Conservation Values
		corner of Garden Island elements of the J Battery complex are now covered in part by sand.	strategic role in the coastal defences of Cockburn Sound and Fremantle following the entry of Japan into the Second World War (1939-45).

11.5 Fisheries - Commercial

11.5.1 Commonwealth and State Fisheries

The diverse range of habitats and species offshore WA has allowed for various fisheries to develop and operate throughout the region.

The Australian Fisheries Management Authority (AFMA) manages fisheries on behalf of the Commonwealth Government and is bound by objectives under the Commonwealth *Fisheries Management Act 1991*.

WA State commercial fisheries are managed by the WA Department of Primary Industries and Regional Development (WA DPIRD) under the WA *Fish Resources Management Act 1994* (FRMA), Fisheries Resources Management Regulations 1995, relevant gazetted notices and licence conditions, and applicable Fishery Management Plans.

Commonwealth and State managed fisheries that operate within the NWMR and in areas beyond this region are summarised in the **Table 11-4**.

Table 11-4 Commonwealth and State managed fisheries

Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
Commonwealth Managed Fisheries						
Southern Bluefin Tuna Fishery	✓	✓	✓	Management area	The Southern Bluefin Tuna Fishery (SBTF) covers the entire EEZ around Australia, out to 200 nm from the coast. They do not fish in the Woodside activity area.	
				Species targeted	Fishing methods	Fishing depth
				Southern bluefin tuna (<i>Thunnus maccoyii</i>)	Longline and purse seine fishing.	Southern bluefin tuna is a pelagic species which can be found to depths of 500 m (AFMA, 2021a)
				Fishing effort	Most of the Australian fishing effort is by purse-seine vessels in the Great Australian Bight and waters off South Australia during summer months, and by longline off the New South Wales coastline during winter months (Patterson <i>et al.</i> , 2020). SBTF is a fishery that is shared amongst many countries. Australia currently has a 35% share of the total global allowable catch, and while wild capture fishing in Australia to sell directly to market can occur anywhere throughout the SBTF's range, currently the vast majority of that quota is value-added through ranching (on-growing the wild captured fish for extra 5-6 months). Ranching requires significant infrastructure, a resident labour force, plus proximity to a fishery able to supply a large quantity of natural feed/sardines (40,000+ tonnes) (for example as available in Port Lincoln). North-west WA is critically important regardless of how the quota is fished because of the proximity to the single spawning ground of this global roaming species. The stock remains classified as overfished.	
Active licences/vessels	Seven purse seine vessels, 20 longline vessels (Patterson <i>et al.</i> , 2020).					
Western Skipjack Tuna Fishery	✓	✓	✓	Management area	The combined western and eastern skipjack tuna (<i>Katsuwonus pelamis</i>) fisheries (STF) encompass the entire Australian EEZ. The Western Skipjack Tuna Fishery (WSTF) extends westward from the SA/Victorian border across the Great Australian Bight and around the west coast of WA to the Cape York Peninsula.	

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Fishery	Woodside Activity Area			Description														
	Browse	NWS/S	NW Cape															
				<table border="1"> <thead> <tr> <th>Species targeted</th> <th>Fishing methods</th> <th>Fishing depth</th> </tr> </thead> <tbody> <tr> <td>Western skipjack tuna (<i>Katsuwonus pelamis</i>)</td> <td>Fishers use purse seine gear (about 98% of catch) and sometimes pole and line when fishing for skipjack tuna.</td> <td>Western skipjack tuna is a pelagic species that can be found to depths of 260 m (AFMA, 2021b).</td> </tr> <tr> <td>Fishing effort:</td> <td colspan="2">The Skipjack Tuna Fishery (STF) has not been actively fished since the 2008-2009 fishing season (Patterson <i>et al.</i>, 2020). The management arrangements for this fishery will be reviewed if active boats re-enter the fishery.</td> </tr> <tr> <td>Active licences/vessels:</td> <td colspan="2">No active vessels operating since 2009.</td> </tr> </tbody> </table>	Species targeted	Fishing methods	Fishing depth	Western skipjack tuna (<i>Katsuwonus pelamis</i>)	Fishers use purse seine gear (about 98% of catch) and sometimes pole and line when fishing for skipjack tuna.	Western skipjack tuna is a pelagic species that can be found to depths of 260 m (AFMA, 2021b).	Fishing effort:	The Skipjack Tuna Fishery (STF) has not been actively fished since the 2008-2009 fishing season (Patterson <i>et al.</i> , 2020). The management arrangements for this fishery will be reviewed if active boats re-enter the fishery.		Active licences/vessels:	No active vessels operating since 2009.			
Species targeted	Fishing methods	Fishing depth																
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Active licences/vessels:	No active vessels operating since 2009.																	
Western Tuna and Billfish Fishery	✓	✓	✓	<table border="1"> <thead> <tr> <th>Management area</th> <td>The Western Tuna and Billfish Fishery (WTBF) extends to the Australian EEZ boundary in the Indian Ocean.</td> </tr> </thead> <tbody> <tr> <th>Species targeted</th> <th>Fishing methods</th> <th>Fishing depth</th> </tr> <tr> <td>Bigeye tuna (<i>Thunnus obesus</i>) Yellowfin tuna (<i>Thunnus albacares</i>) Swordfish (<i>Xiphias gladius</i>) Albacore (<i>Thunnus alalunga</i>) Striped marlin (<i>Kajikia audax</i>)</td> <td>Fishers mainly use pelagic longline fishing gear to catch the targeted species. Minor line (including handline, troll, rod and reel) can also be used.</td> <td>Species have a broad depth distribution, with tuna occurring at 150 – 300 m, striped marlin at 150 m and swordfish at up to 600 m (BRS, 2007).</td> </tr> <tr> <td>Fishing effort:</td> <td colspan="2">The WTBF operates in Australia’s EEZ and high seas of the Indian Ocean. Fishing effort in recent years has been concentrated off south-west WA, with occasional activity off SA.</td> </tr> <tr> <td>Active licences/vessels:</td> <td colspan="2">Two pelagic longline vessels and two minor longline vessels (Patterson <i>et al.</i>, 2020).</td> </tr> </tbody> </table>	Management area	The Western Tuna and Billfish Fishery (WTBF) extends to the Australian EEZ boundary in the Indian Ocean.	Species targeted	Fishing methods	Fishing depth	Bigeye tuna (<i>Thunnus obesus</i>) Yellowfin tuna (<i>Thunnus albacares</i>) Swordfish (<i>Xiphias gladius</i>) Albacore (<i>Thunnus alalunga</i>) Striped marlin (<i>Kajikia audax</i>)	Fishers mainly use pelagic longline fishing gear to catch the targeted species. Minor line (including handline, troll, rod and reel) can also be used.	Species have a broad depth distribution, with tuna occurring at 150 – 300 m, striped marlin at 150 m and swordfish at up to 600 m (BRS, 2007).	Fishing effort:	The WTBF operates in Australia’s EEZ and high seas of the Indian Ocean. Fishing effort in recent years has been concentrated off south-west WA, with occasional activity off SA.		Active licences/vessels:	Two pelagic longline vessels and two minor longline vessels (Patterson <i>et al.</i> , 2020).	
				Management area	The Western Tuna and Billfish Fishery (WTBF) extends to the Australian EEZ boundary in the Indian Ocean.													
				Species targeted	Fishing methods	Fishing depth												
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Active licences/vessels:	Two pelagic longline vessels and two minor longline vessels (Patterson <i>et al.</i> , 2020).																	
Western Deepwater Trawl Fishery			✓	<table border="1"> <thead> <tr> <th>Management area</th> <td>The Western Deepwater Trawl Fishery (WDTF) is located in deep water off WA, from the line approximating the 200 m isobath to the edge of the Australian Fishing Zone (AFZ).</td> </tr> </thead> </table>	Management area	The Western Deepwater Trawl Fishery (WDTF) is located in deep water off WA, from the line approximating the 200 m isobath to the edge of the Australian Fishing Zone (AFZ).												
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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				<p>Species targeted</p> <p>More than 50 species, historically dominated by six commercial finfish species or species groups: Orange roughy (<i>Hoplostethus atlanticus</i>) Oreos (Oreosomatidae) Boarfish (Pentacerotidae) Eteline snapper (Lutjanidae: Etelinae) Apsiline snapper (Lutjanidae: Apsilinae) Sea bream (Lethrinidae)</p>	<p>Fishing methods</p> <p>Demersal trawl.</p>	<p>Fishing depth</p> <p>Water deeper than 200 m, stakeholder consultation has indicated that this may be to depths of 800 m.</p>
				<p>Fishing effort:</p> <p>The number of vessels active in the fishery and total hours trawled have fluctuated from year to year. Notably, total hours trawled were relatively high for a brief period during the early 2000s when fishers targeted ruby snapper and deepwater bugs (Patterson <i>et al.</i>, 2020). Total fishing effort has been variable but relatively low since then. Effort in 2018-2019 (492 trawl hours) was less than half that of 2017-2018 (1108 trawl hours) (Patterson <i>et al.</i>, 2020).</p>		
				<p>Active licences/vessels:</p> <p>One active vessel in 2018-2019 (Patterson <i>et al.</i>, 2020).</p>		
North-west Slope Trawl Fishery	✓	✓		<p>Management area</p> <p>The North-west Slope Trawl Fishery (NWSTF) extends, from 114 °E to 125 °E, from the 200 m isobath to the outer limit of the AFZ (200 nm from the coastline, which is the boundary of the Australian EEZ).</p>		
				<p>Species targeted</p> <p>Australian scampi (<i>Metanephrops australiensis</i>) and smaller quantities of velvet and Boschma's scampi (<i>M. velutinus</i> and <i>M. boschmai</i>) Mixed snappers have historically been an important component of the catch.</p>	<p>Fishing methods</p> <p>Demersal trawl.</p>	<p>Fishing depth</p> <p>Typically at depths of 350 to 600 m (Patterson <i>et al.</i>, 2017), however stakeholder consultation has indicated that this may be to depths of 800 m.</p>

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				<p>Fishing effort: The NWSTF commenced in 1985 and the number of active vessels peaked at 21 in the 1986-1987 season and declined through the 1990s before increasing to 10 vessels in 2000-2001 and 2002-2002 seasons. Four vessels operated in the 2017-2018 and 2018-2019 seasons (Patterson <i>et al.</i> 2020). Fishing for scampi occurs over soft, muddy sediments or sandy habitats, using demersal trawl gear on the continental slope (Patterson <i>et al.</i>, 2017).</p> <p>Active licences/vessels: Four vessels (Patterson <i>et al.</i>, 2020).</p>		
State Managed Fisheries						
Pilbara Fish Trawl (Interim) Managed Fishery		✓		<p>Management area The Pilbara Trawl (Interim) Managed Fishery is of high intensity and is divided into two zones and an area governed by Schedule 5 (prohibited to trawling). In addition to the Prohibited Trawl Fishing area, no fish trawl units are allocated for use in Zone 1 or Areas 3 and 6 of Zone 2 (which comprises six management areas) (Newman <i>et al.</i>, 2020a). No fish trawl units have been allocated for use in Area 6 of Zone 2 since the management plan commenced operation in 1998.</p>		
				<p>Species targeted</p> <p>The Pilbara Fish Trawl (Interim) Managed Fishery (PFTIMF) targets more than 50 scalefish species. The five main demersal scalefish species landed by the fisheries in the Pilbara region are blue-spotted emperor, crimson snapper, rosy threadfin bream, red emperor and goldband snapper in 2018 (Newman <i>et al.</i>, 2020a).</p>	<p>Fishing methods</p> <p>Demersal trawl.</p>	<p>Fishing depth</p> <p>The Pilbara Fish Trawl Fishery lands the largest component of the catch and operates in waters between 50 and 200 m water depth (Allen <i>et al.</i>, 2014, Newman <i>et al.</i> 2015). Stakeholders have advised that trawling can occur in depths of up to approximately 800 m.</p>
				<p>Fishing effort:</p> <p>Based on State of the Fisheries annual reports provided by DPIRD, catch trends are seen to be increasing over the past reporting years:</p>		

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				<p>Pilbara Trawl (Interim) Managed Fishery caught 1996 t in 2018-19, 1780 t in 2017-18, 1529 t in 2016-17, 1172 t in 2015-16, 1105 t in 2014-15.</p> <p>Active licences/vessels: Two Pilbara Trawl (Interim) Managed Fishery vessels in 2017 (Newman <i>et al.</i>, 2020a). Active vessels data are confidential as there were fewer than three vessels in the Pilbara Fish Trawl Interim Managed Fishery (Newman <i>et al.</i>, 2020a).</p>		
Pilbara Trap Managed Fishery		✓	✓	<p>Management area The Pilbara Trap Fishery covers the area from Exmouth northwards and eastwards to the 120° line of longitude, and offshore as far as the 200 m isobath. Like the trawl fishery, the trap fishery is also managed using input controls in the form of individual transferable effort allocations monitored with a satellite-based vessel management system. The fishery includes six licences allocated to three vessels, operating principally from Onslow.</p>		
				<p>Species targeted</p> <p>Pilbara Trap Managed Fishery catch is made up of around 45-50 different fish species. The four main species landed by the fisheries in the Pilbara region are blue-spotted emperor, red emperor, goldband snapper and Rankin cod.</p>	<p>Fishing methods</p> <p>Demersal fish traps.</p>	<p>Fishing depths</p> <p>Greatest effort in waters less than 50 m depth targeting high value species such as red emperor and goldband snapper.</p>
				<p>Fishing effort</p> <p>Based on State of the Fisheries annual reports provided by DPIRD, catch trends are seen to be increasing over the past reporting years: Pilbara Trap Managed Fishery caught 563 t in 2018-19, 573 t in 2017-18, 495 t in 2016-17, 510 t in 2015-16, 268 t in 2014-15. In 2018, the total catch for the Pilbara Trap Managed Fishery was 563 t, making up 21% of the total catch by the Pilbara Demersal Scale Fishery (Newman <i>et al.</i>, 2019).</p>		

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				<p>Active licences/vessels</p> <p>In the 2019 season, there were six licences in the Pilbara Trap Managed Fishery, (Newman <i>et al.</i>, 2020a). Active vessels data are confidential as there were fewer than three vessels in the Pilbara Trap Managed Fishery (Newman <i>et al.</i>, 2019).</p>		
Pilbara Line Managed Fishery		✓	✓	<p>Management area</p> <p>The Pilbara Line Managed Fishery boat licences are permitted to operate anywhere within "Pilbara waters", bounded by a line commencing at the intersection of 21°56'S latitude and the high water mark on the western side of the North-west Cape on the mainland of WA; west along the parallel to the intersection of 21°56'S latitude and the boundary of the AFZ and north to longitude 120°E.</p>		
				<p>Species targeted</p>	<p>Fishing method</p>	<p>Fishing depths</p>
				<p>The Pilbara Line Managed Fishery catch is made up around 45-50 different fish species.</p> <p>The Pilbara Line Managed Fishery targets similar demersal species to the Pilbara Trap and Trawl fisheries, as well as some deeper offshore species such as ruby snapper and eightbar grouper</p> <p>The Pilbara Line Managed Fishery operates on an exemption basis that enables licence holders to fish for any nominated five-month block during the year.</p>	<p>Demersal long line.</p>	<p>Pilbara Line Fishing Depth: Operates up to a depth of 600 m.</p>
				<p>Fishing effort</p>	<p>Based on State of the Fisheries annual reports provided by DPIRD, catch trends are seen to be increasing over the past reporting years:</p> <p>Pilbara Line Managed Fishery caught 93 t in 2018-19, 143 t in 2017-18, 126 t in 2016-17, 97 t in 2015-16, 40 t in 2014-15.</p> <p>The total catch in 2018 for the Pilbara Line Managed Fishery was 93 t, making up 3% of the total catch by the Pilbara Demersal Scalefish Fishery (Newman <i>et al.</i>, 2019).</p>	

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				Active licences/vessels In the 2018 season there are nine individual licences in the Pilbara Line Fishery, held by seven operators. Active vessels data is confidential as there were fewer than three vessels in the Pilbara Line Fishery (Newman <i>et al.</i> , 2018).		
Mackerel Managed Fishery	✓	✓	✓	Management area The commercial fishery extends from Geraldton to the Northern Territory border. There are three managed fishing areas: Kimberley (Area 1), Pilbara (Area 2), and Gascoyne and West Coast (Area 3).		
				Species targeted Spanish mackerel (<i>Scomberomorus commerson</i>) Grey mackerel (<i>S. semifasciatus</i>) Other species from the genus <i>Scomberomorus</i>	Fishing methods Near-surface trawling gear. Jig fishing.	Fishing depth Previous engagement with WAFIC suggests that the depth of fisheries may extend to 70 m.
				Fishing effort: Most of the catch is taken from waters off the Kimberley coasts (Lewis and Brand-Gardner, 2018), reflecting the tropical distribution of mackerel species (Molony <i>et al.</i> , 2015). Most fishing activity occurs around the coastal reefs of the Dampier Archipelago and Port Hedland area, with the seasonal appearance of mackerel in shallower coastal waters most likely associated with feeding and gonad development before spawning (Mackie <i>et al.</i> , 2003). Based on State of the Fisheries annual reports provided by DPIRD, catch trends are as follows: 213 t in 2018-19 (the lowest on record (Lewis <i>et al.</i> , 2020), 283 t in 2017-18, 276 t in 2016-17, 302 t in 2015-16, 322 t in 2014-15.		
				Active licences/vessels: Fifteen boats fished in 2018, with approximately 35-40 people directly employed in the Mackerel Managed Fishery, primarily from May-November (Lewis <i>et al.</i> , 2020).		
Marine Aquarium Managed Fishery	✓	✓	✓	Management area The Marine Aquarium Managed Fishery is able to operate in all State waters. The fishery is typically more active in waters south of Broome and higher levels of effort around the Capes region, Perth, Geraldton, Exmouth, Dampier and Broome (Newman <i>et al.</i> , 2020b).		
				Species targeted	Fishing methods	Fishing depth

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				Finfish, hard coral, soft coral, tridacnid clams, syngnathids (seahorses and pipefish), other invertebrates (including molluscs, crustaceans, echinoderms etc.), algae, seagrasses and 'live rock'.	The fishery is diver-based, which typically restricts effort to safe diving depths (less than 30 m).	Less than 30 m, as advised by WAFIC.
				Fishing effort:	Total catch for the Marine Aquarium Managed Fishery in 2018 was 156,188 fishes, 32.025 t of coral, live rock and living sand and 176.02 L of marine plants and live feed.	
				Active licences/vessels:	Eleven licences were active in 2019 (Newman <i>et al.</i> , 2020b).	
Beche-de-mer Fishery	✓	✓	✓	Management area	Fishing occurs in the northern half of WA from Exmouth Gulf to the NT border and is managed under Ministerial Exemptions.	
				Species targeted	Fishing methods	Fishing depth
				The sea cucumber fishery targets two main species: sandfish (<i>Holothuria scabra</i>) and redfish (<i>Actinopyga echinites</i>).	Diving	The targeted species typically inhabit nearshore in shallow depths.
				Fishing effort	Based on State of the Fisheries annual reports provided by DPRID, catch trends are as follows: 62t in 2018 (Gaughan and Santoro, 2020), 135t in 2017, 93t in 2016, 38t in 2015	
				Active licences/vessels	Six active licences in 2019 (Hart <i>et al.</i> , 2019). Active vessels data is confidential as there were fewer than three vessels.	
Onslow Prawn Managed Fishery		✓		Management area	The Onslow Prawn Managed Fishery encompasses a portion of the continental shelf off the Pilbara.	
				Species targeted	Fishing methods	Fishing depth

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Fishery	Woodside Activity Area			Description						
	Browse	NWS/S	NW Cape							
				<p>The fishery targets: Western king prawns (<i>Penaeus esculentus</i>) Brown tiger prawns (<i>Penaeus esculentus</i>) Blue endeavour prawns (<i>Metapenaeus endeavouri</i>)</p> <p>Low opening, otter prawn trawl systems.</p> <p>Prawn trawling takes place in water depths of approximately 30 metres and less (licence holder feedback). Fishery and or fishing activity overlaps the Beadon Creek dredging scope (Sporer <i>et al.</i>, 2015).</p>						
				<p>Fishing effort: The total landings for the Onslow Prawn Managed Fishery in 2018 were less than 60 t below the target catch range (Kangas <i>et al.</i>, 2020a).</p> <p>Active licences/vessels: One vessel (Kangas <i>et al.</i>, 2020a).</p>						
Pearl Oyster Managed Fishery	✓	✓	✓	<p>Management area Located in shallow coastal waters with the pearl oyster managed fishery designated by four zones extending from Exmouth to Kununurra and the seaward boundary demarcated by the 200 nm EEZ.</p>						
				<table border="1"> <thead> <tr> <th>Species targeted</th> <th>Fishing methods</th> <th>Fishing depth</th> </tr> </thead> <tbody> <tr> <td>Pearl oysters (<i>Pinctada maxima</i>).</td> <td>Drift diving.</td> <td>Fishing effort is mostly focussed in shallow coastal waters (10-15 m depth), with a maximum depth of 35 m (Lulofs <i>et al.</i> 2002).</td> </tr> </tbody> </table>	Species targeted	Fishing methods	Fishing depth	Pearl oysters (<i>Pinctada maxima</i>).	Drift diving.	Fishing effort is mostly focussed in shallow coastal waters (10-15 m depth), with a maximum depth of 35 m (Lulofs <i>et al.</i> 2002).
Species targeted	Fishing methods	Fishing depth								
Pearl oysters (<i>Pinctada maxima</i>).	Drift diving.	Fishing effort is mostly focussed in shallow coastal waters (10-15 m depth), with a maximum depth of 35 m (Lulofs <i>et al.</i> 2002).								
				<p>Fishing effort: In 2018, catch was taken from Zones 2 and 3 with no fishing in Zone 1. The number of pearl oysters caught for 2018-19 was 614,002. Total effort was 15,637 dive hours, this was an increase from 2017 effort of 12,845 hours. No fishing occurred in Zone 1 in 2017 and 2018 (Gaughan and Santoro, 2020).</p> <p>Active licences/vessels: 15,637 diver hours (Hart <i>et al.</i>, 2020a).</p>						
		✓	✓	<p>Management area The Pilbara Crab Managed Fishery comprises WA waters off the north-western coast of WA north of 23° 34' south latitude and west of 120° 00' east longitude. Areas of the fishery north and east of Exmouth and</p>						

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Fishery	Woodside Activity Area			Description			
	Browse	NWS/S	NW Cape				
Pilbara Crab Managed Fishery				nearshore are currently closed as per Schedule 2 of the Draft Management Plan for the Pilbara Crab Managed Fishery.			
				Species targeted	Fishing methods	Fishing depth	
				Crabs of the Family Portunidae, excluding crabs of the genus <i>Scylla</i> .	Traps.	Up to 50 m deep.	
				Fishing effort:	The capacity of the fishery is 600 traps.		
				Active licences/vessels:	No information available at this time.		
South-west Coast Salmon Managed Fishery	✓	✓	✓	Management area			
				Species targeted	Fishing methods	Fishing depth	
				Western Australian salmon (<i>Arripis truttaceus</i>)	Beach seine nets.	Information not available however, species generally found in shallow waters (up to 30 m).	
				Fishing effort:	No fishing occurs north of the Perth metropolitan area, despite the managed fishery boundary extending to Cape Beaufort (WA/Northern Territory border), as advised by WAFIC. The 2018 commercial catch was 191 t, with 72% taken by the South West Coast Salmon Managed Fishery, 25% by the South Coast Salmon Managed Fishery and 3% by other fisheries (Duffy and Blay, 2020a).		
				Active licences/vessels:	Six licences.		
	✓	✓	✓	Management area			
				The Specimen Shell Managed Fishery (SSMF) encompasses the entire WA coastline, but effort is concentrated in areas adjacent to the population centres such as Broome, Exmouth, Shark Bay,			

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Fishery	Woodside Activity Area			Description			
	Browse	NWS/S	NW Cape				
Specimen Shell Managed Fishery				Geraldton, Perth, Mandurah, the Capes area and Albany (Hart <i>et al.</i> , 2020b). There are a number of closed areas where the SSMF is not permitted to operate. These include various marine parks and aquatic reserves, such as Ningaloo Marine Park.			
				Species targeted	Fishing methods	Fishing depth	
				The Specimen Shell Managed Fishery targets the collection of specimen shells for display, collection, cataloguing and sale.	Collection is predominantly by hand when diving to wading in shallow, coastal waters, though in deeper water collection may be conducted by remotely operated vehicles (limited to one per licence).	For collection by hand, (diver-based) this typically restricts effort to safe diving depths (less than 30 m). ROV collection could enable depths up to 300 m (Hart <i>et al.</i> , 2017). In the past there has been one licence holder in the Specimen Shell Managed Fishery who has trialled ROV means of shell collection, WAFIC have provided advice that this fishery is no longer active.	
				Fishing effort:	Information not available.		
				Active licences/vessels:	In 2018 there were 31 licences with only two divers allowed in the water per licences at one time (Hart <i>et al.</i> , 2018). The number of people employed regularly in the fishery is likely to be about 21 (Hart <i>et al.</i> , 2018).		
West Australian Abalone Fishery	✓	✓	✓	Management area			
				The Western Australian Abalone Fishery includes all coastal waters from the WA and SA border to the WA and NT border. The fishery is concentrated on the south coast and the west coast.			
				Species targeted	Fishing methods	Fishing depth	
Greenlip abalone (<i>Haliotis laevis</i>) Brownlip abalone (<i>Haliotis conicopora</i>) Roe's abalone (<i>Haliotis roei</i>)	Divers.	Distribution to 5 m depth for Roe's abalone and 40 m depth for greenlip / brownlip abalone (DOF, 2011).					

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				<p>Fishing effort: In 2018, the total commercial catch was 48 t, 1 t less than the catch in each of the last two seasons. No commercial fishing for abalone north of Moore River (Zone 8 of the managed fishery) has occurred since 2011–2012 (Strain <i>et al.</i>, 2018).</p> <p>Active licences/vessels: 26 vessels active in Roe’s abalone fishery (WAFIC⁵).</p>		
West Coast Deep Sea Crustacean Managed Fishery	✓	✓	✓	<p>Management area The West Coast Deep Sea Crustacean Managed Fishery extends north from Cape Leeuwin to the WA/NT border in water depths greater than 150 m within the AFZ.</p>		
				<p>Species targeted</p>	<p>Fishing methods</p>	<p>Fishing depth</p>
				<p>The fishery targets deepwater crustaceans. Catches were dominated by crystal crabs of which 99% of their Total Allowable Catch (TAC) was landed (How and Orme, 2020a). Crystal (snow) crab (<i>Chaceon albus</i>) Giant (king) crab (<i>Pseudocarcinus gigas</i>) Champagne (spiny) crabs (<i>Hypothalassia acerba</i>)</p>	<p>Baited pots, or traps, are operated in long-lines which have between 80 and 180 pots attached to a main line marked by a float at each end.</p>	<p>Deeper than 150 m (and mostly at depths of between 500 m – 800 m). Most of the commercial Crystal crab catch is taken in depths of 500 m – 800 m (WAFIC⁶).</p>
				<p>Fishing effort: The total landings in 2018 was 168. t. Two vessels operated in the fishery in 2017, using baited pots operated in a longline formation in the shelf edge waters, mostly in depths between 500 and 800 m (How and Orme, 2020a). Fishing effort was concentrated between Fremantle and Carnarvon.</p>		
				<p>Active licences/vessels: There were four active vessels in 2018 (How and Orme, 2020a).</p>		

⁵ <https://www.wafic.org.au/fishery/roes-abalone-fishery/>

⁶ <https://www.wafic.org.au/fishery/west-coast-deep-sea-crustacean-fishery/>

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
Abrolhos Islands and Mid-West Trawl Fishery			✓	Management area	The Abrolhos Islands and Mid-West Trawl Fishery (AIMWTMF) operates around the Abrolhos Islands within the SWMR.	
				Species targeted	Fishing methods	Fishing depth
				Saucer scallops (<i>Ylistrum balloti</i> , formerly <i>Amusium balloti</i>)	Trawl.	Information not available, however, the species occurs at depth of around 30-60 m and therefore fishing effort would likely be at these depths (Himmelman <i>et al.</i> , 2009).
				Fishing effort:	The scallop landings in the AIMWTMF were 31.0 t meat weight (154.8 t whole weight). Between 2011 and 2015, the annual pre-season surveys showed very low recruitment (1-year old), as a result of the 2011 extreme marine heatwave and subsequent poor spawning stock (Kangas <i>et al.</i> , 2020b). The fishery was closed between 2011 and 2016.	
				Active licences/vessels:	Information about licences or vessels is not available but the Department of Primary Industry and Regional Development reported 774 t of catch from this fishery in the 2019 annual report (DPIRD, 2019).	
Broome Prawn Managed Fishery	✓			Management area	The Broome Prawn Managed Fishery (BPMF) operates off Broome and forms part of the North Coast Prawn Fishery.	
				Species targeted	Fishing methods	Fishing depth
				Western king prawn (<i>Penaeus latisulcatus</i>) Coral prawn	Trawl.	Trawling is generally in waters between 30 and 60 m deep, however can occur down to 100 m (DOEH, 2004).
				Fishing effort:	BPMF recorded extremely low fishing effort in 2018. Only two vessels undertook trial fishing to investigate whether the catch rates were sufficient for commercial fishing. This resulted in negligible landings of Western king prawn (Kangas <i>et al.</i> , 2020a).	

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Fishery	Woodside Activity Area			Description			
	Browse	NWS/S	NW Cape				
				Active licences/vessels: Two vessels conducting fishing trial operated in 2018 (Kangas <i>et al.</i> , 2020a).			
Exmouth Gulf Prawn Managed Fishery			✓	Management area The estimated employment in the fishery in 2017 was 18 people including skippers and other crew (Kangas <i>et al.</i> , 2018). The fishery occupies a total area of 4000 km ² , with only half of this area being trawled (Fletcher and Santoro, 2015).			
				Species targeted	Fishing methods	Fishing depth	
				Western king prawn (<i>Penaeus latisulcatus</i>) Brown tiger prawn (<i>Penaeus esculentus</i>) Blue endeavour prawn (<i>Metapenaeus endeavouri</i>) Banana prawn (<i>Penaeus merguinensis</i>)	Trawl.	Information not available.	
				Fishing effort:	The total landings of prawns in 2018 were 880 t (Kangas <i>et al.</i> , 2020a). In the 2016 season, a fishing effort of about 23,000 hours resulted in a catch of 822 t.		
				Active licences/vessels:	The precise number of vessels is unreported. Eighteen people were said to be employed in this fishery in 2018 (Kangas <i>et al.</i> , 2019); however, in 2013 it was reported that 18 skippers as well as other crew and support staff were employed (WAFIC ⁷).		
Gascoyne Demersal Scalefish Managed Fishery			✓	Management area The Gascoyne Demersal Scalefish Fishery (GDSF) is located between the southern Ningaloo Coast to south of Shark Bay (23°07.30'S to 26°.30'S) with a closure area at Point Maud to Tantabiddi (21°56.30'S) (WAFIC ⁸).			
				Species targeted	Fishing methods	Fishing depth	

⁷ <https://www.wafic.org.au/fishery/exmouth-gulf-prawn-fishery/>

⁸ <https://www.wafic.org.au/fishery/gascoyne-demersal-scalefish-fishery/>

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				Pink snapper (<i>Chrysophrys auratus</i>) Goldband snapper (<i>Pristipomoides multidentis</i>) Red emperor (<i>Lutjanus sebae</i>) Cods (<i>Gadus morhua</i>) Emperors (<i>Lethrinus miniatus</i>)	Mechanised handlines.	Information not available.
				Fishing effort:	The GDSF reported a total commercial catch of 210 t in 2017-18.	
				Active licences/vessels:	In 2018, 13 vessels fished during the season, in the 2017 season there were 16 vessels (Gaughan and Santoro, 2018).	
Kimberley Developing Mud Crab Fishery	✓			Management area	The Kimberley Developing Mud Crab Fishery is one of two small trap-based crab fisheries that exist in the North Coast Bioregion between Cambridge Gulf and Broome (Gaughan and Santoro, 2018).	
				Species targeted	Fishing methods	Fishing depth
				Brown mud crab (<i>Scylla olivacea</i>) Green mud crab (<i>Scylla serrata</i>)	Trap.	Information not available.
				Fishing effort:	The catch landed represents all commercially caught mud crabs landed in WA for 2018. A nominal catch rate of 0.66 kg/traplift was recorded for 2018, which is a 28% decrease from 2017 but remains above the harvest strategy threshold (Johnston <i>et al.</i> , 2020).	
				Active licences/vessels:	There are currently three licences issued to commercial operators (600 trap limit), and three exemptions issued to Indigenous groups (total of 210 traps currently allocated of a maximum 600 traps) (Johnston <i>et al.</i> , 2020).	
Nickol Bay Prawn Managed Fishery		✓		Management area	The Nickol Bay Prawn Managed Fishery operates in nearshore and offshore waters of the Pilbara region along the NWS.	
				Species targeted	Fishing methods	Fishing depth

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Fishery	Woodside Activity Area			Description						
	Browse	NWS/S	NW Cape							
				<p>Banana prawn (<i>Penaeus merguianus</i>) Western king prawn (<i>Penaeus latisulcatus</i>) Brown tiger prawn (<i>Penaeus esculentus</i>) Blue endeavour prawn (<i>Metapenaeus endeavouri</i>)</p> <p>Fishing effort: Trawling has been reported to occur at several locations along the Pilbara coast to the east of the Burrup Peninsula, including within the waters of Nickol Bay (Fletcher and Santoro, 2015). The total landings for the 2018 season were 81 t. Fishing effort was less than half at 138 days, compared to 281 boat days in 2017 (Kangas <i>et al.</i>, 2020a).</p> <p>Active licences/vessels: The precise number of vessels is unreported, though low effort produced a catch of 17 t in 2016 (Kangas <i>et al.</i>, 2018).</p>						
Northern Demersal Scalefish Managed Fishery	✓			<p>Management area The fishery is divided into two fishing areas: an inshore sector (Area 1) and an offshore sector (Area 2) (Newman <i>et al.</i>, 2018). Area 1 permits line fishing only, between the high water mark and the 30 m isobath. Area 2 permits handline, dropline and fish trap fishing methods and is further divided into zones. Zone A is an inshore area, Zone B comprises the area with most historical fishing activity, and Zone C is an offshore deep slope area representing waters deeper than 200 m (Fletcher <i>et al.</i>, 2017).</p> <table border="1"> <thead> <tr> <th>Species targeted</th> <th>Fishing methods</th> <th>Fishing depth</th> </tr> </thead> <tbody> <tr> <td> Goldband snapper (<i>Pristipomoides multidentis</i>) Blue-spotted emperor (<i>Lethrinus punctulatus</i>) Red emperor (<i>Lutjanus sebae</i>) Rankin cod (<i>Epinephelus multinotatus</i>) </td> <td>Line fishing, handline, dropline and fish trap fishing.</td> <td>Information not available.</td> </tr> </tbody> </table>	Species targeted	Fishing methods	Fishing depth	Goldband snapper (<i>Pristipomoides multidentis</i>) Blue-spotted emperor (<i>Lethrinus punctulatus</i>) Red emperor (<i>Lutjanus sebae</i>) Rankin cod (<i>Epinephelus multinotatus</i>)	Line fishing, handline, dropline and fish trap fishing.	Information not available.
Species targeted	Fishing methods	Fishing depth								
Goldband snapper (<i>Pristipomoides multidentis</i>) Blue-spotted emperor (<i>Lethrinus punctulatus</i>) Red emperor (<i>Lutjanus sebae</i>) Rankin cod (<i>Epinephelus multinotatus</i>)	Line fishing, handline, dropline and fish trap fishing.	Information not available.								

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Fishery	Woodside Activity Area			Description			
	Browse	NWS/S	NW Cape				
				<p>Fishing effort: In 2018, the fishery reported a total catch of 1297 t. Most of the catch is landed from Zone B, with a catch of 1106 t in 2018. The level of catch in Zone B is the highest reported since zoning was implemented in 2006 (Newman <i>et al.</i>, 2019).</p> <p>Active licences/vessels: Six vessels fished in the 2018 season and at least 20 people were directly employed (Gaughan and Santoro, 2018).</p>			
Octopus Interim Management Fishery				<p>Management area The developing Octopus Fishery operates from Kalbarri Cliffs in the north to Esperance in the south.</p>			
				<p>Species targeted</p>	<p>Fishing methods</p>	<p>Fishing depth</p>	
				<p><i>Octopus sp. cf. tetricus</i></p>	<p>Passive shelter pots and active traps.</p>	<p>In inshore waters to a depth of 70 m (DPIRD, 2018).</p>	
				<p>Fishing effort:</p>	<p>In 2019, the total commercial octopus catch was 314 t, which was 22% higher than the 2017 catch of 257 t. In 2016, about 200 vessels reported a total catch of 252 t (Hart <i>et al.</i>, 2020c).</p>		
				<p>Active licences/vessels:</p>	<p>About 21 vessels fish within the octopus specific fisheries, and about 200 vessels from the West Coast Rock Lobster Fishery catch octopus as bycatch (Gaughan and Santoro, 2018).</p>		
Shark Bay Beach Seine and Mesh Net Managed Fishery				<p>Management area The Shark Bay Beach Seine and Mesh Net Managed Fishery operates from Denham.</p>			
				<p>Species targeted</p>	<p>Fishing methods</p>	<p>Fishing depth</p>	
				<p>Whiting (yellowfin <i>Sillago schomburgkii</i> and goldenline <i>S. analis</i>) Sea mullet (<i>Mugil cephalus</i>) Tailor (<i>Pomatomus saltatrix</i>) Western yellowfin bream (<i>Acanthopagrus australis</i>)</p>	<p>Beach seine and mesh net.</p>	<p>Information not available.</p>	

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				<p>Fishing effort: In 2018, the total catch was 176 t (Gaughan and Santoro, 2020). The fishery currently employs about 14 fishers based on the seven fishery licences in operation (WAFIC⁹).</p> <p>Active licences/vessels: Six vessels operated employing around 12 fishers (Gaughan and Santoro, 2018).</p>		
Shark Bay Crab Managed Fishery				<p>Management area The Shark Bay Crab Managed Fishery operates within the NWMR.</p>		
				<p>Species targeted</p>	<p>Fishing methods</p>	<p>Fishing depth</p>
				Blue swimmer crab (<i>Portunus armatus</i>)	Trap and trawl.	Information not available.
				<p>Fishing effort: Commercial fishing for blue swimmer crabs in Shark Bay was voluntarily halted by industry in 2012 to facilitate stock rebuilding. The stock is still in a recovery phase; however, the fishery has resumed and reported a total commercial catch of 518 t in the 2017/18 season. The average commercial trap catch rate was 1.5 kg/traplift during 2017/18 (Chandrapavan <i>et al.</i>, 2017).</p>	<p>Active licences/vessels: The precise number of vessels in the Shark Bay Blue Swimmer Crab Fishery is unreported. There are five crab trap permits. These permits are consolidated onto three active vessels (WAFIC¹⁰).</p>	
				<p>Management area The Shark Bay Prawn Managed Fishery is the highest producing WA fishery for prawns.</p>		
Shark Bay Prawn and Scallop Managed Fishery				<p>Species targeted</p>	<p>Fishing methods</p>	<p>Fishing depth</p>
				Western king prawn (<i>Penaeus latisulcatus</i>) Brown tiger prawn (<i>Penaeus esculentus</i>)	Low-opening otter trawls.	Information not available.
				<p>Management area The Shark Bay Prawn Managed Fishery is the highest producing WA fishery for prawns.</p>		

⁹ <https://www.wafic.org.au/fishery/inner-shark-bay-scalefish-fishery/>

¹⁰ <https://www.wafic.org.au/fishery/shark-bay-prawn-and-scallop-managed-fisheries/>

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				<p>Endeavour prawns (<i>Metapenaeus endeavouri</i>) Coral prawns (<i>Metapenaeopsis sp.</i>) Saucer scallop (<i>Amusium balloti</i>)</p> <p>Fishing effort: The Shark Bay Scallop Managed Fishery is currently in a recovery phase due to the results from the pre-season survey of stock abundance (Fletcher and Santoro, 2015; Kangas <i>et al.</i>, 2018).</p> <p>Active licences/vessels: The precise number of vessels in the Shark Bay Prawn Managed Fishery is unreported; however, about 100 people are employed in this fishery (Gaughan and Santoro, 2018). About 20 skippers and crew are employed in scallop fishing in the Shark Bay and South Coast fisheries across 18 vessels in 2015 (Sporer <i>et al.</i>, 2015).</p>		
South Coast Crustacean Managed Fishery	-	-	-	<p>Management area The South Coast Crustacean Managed Fishery comprises four fisheries: the Windy Harbour/Augusta Rock Lobster Managed Fishery, the Esperance Rock Lobster Managed Fishery, the Southern Rock Lobster Pot Regulation Fishery and the South Coast Deep-Sea Crab Fishery.</p>		
				<p>Species targeted</p>	<p>Fishing methods</p>	<p>Fishing depth</p>
				<p>Southern rock lobster (<i>Jasus edwardsii</i>) Western rock lobster (<i>Panulirus cygnus</i>) Giant crab (<i>Pseudocarcinus gigas</i>) Crystal crab (<i>Chaceon albus</i>) Champagne crab (<i>Hypothalassia acerba</i>)</p>	<p>Pots.</p>	<p>Information not available.</p>
				<p>Fishing effort: The South Coast Crustacean Managed Fishery reported a total catch of 101.2 t in 2018 season and the value of the fishery for 2017/2018 was about \$5.9 million (Howe and Orme, 2020b).</p>	<p>Active licences/vessels: The number of vessels is unknown; however, a total of 1977 pots are licensed to be used.</p>	
				<p>Management area The fishery is active in coastal waters between Cape Leeuwin and the South Australia border. Landings are primarily at Albany, Bremer Bay and Esperance (Norriss and Blazeski, 2020).</p>		
	-	-	-	<p>Management area The fishery is active in coastal waters between Cape Leeuwin and the South Australia border. Landings are primarily at Albany, Bremer Bay and Esperance (Norriss and Blazeski, 2020).</p>		

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Fishery	Woodside Activity Area			Description												
	Browse	NWS/S	NW Cape													
South Coast Purse Seine Managed Fishery				<table border="1"> <thead> <tr> <th>Species targeted</th> <th>Fishing methods</th> <th>Fishing depth</th> </tr> </thead> <tbody> <tr> <td>Small pelagic finfish such as pilchards and yellowtail scad using purse seine nets from vessels. Sandy sprat (<i>Hyperlophus vittatus</i>) Blue sprat (<i>Spratelloides robustus</i>)</td> <td>Purse seine.</td> <td>Information not available.</td> </tr> <tr> <td>Fishing effort:</td> <td colspan="2">In the 2017/18 season the total catch effort was 2,168 t (Norriss and Blazeski, 2020).</td> </tr> <tr> <td>Active licences/vessels:</td> <td colspan="2">Nine active vessels in 2017/18 (Norriss and Blazeski, 2020).</td> </tr> </tbody> </table>	Species targeted	Fishing methods	Fishing depth	Small pelagic finfish such as pilchards and yellowtail scad using purse seine nets from vessels. Sandy sprat (<i>Hyperlophus vittatus</i>) Blue sprat (<i>Spratelloides robustus</i>)	Purse seine.	Information not available.	Fishing effort:	In the 2017/18 season the total catch effort was 2,168 t (Norriss and Blazeski, 2020).		Active licences/vessels:	Nine active vessels in 2017/18 (Norriss and Blazeski, 2020).	
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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
The South Coast Salmon Managed Fishery	-	-	-	Management area	The South Coast Salmon Managed Fishery is one of two fisheries operating in the South Coast Bioregion that target nearshore and estuarine finfish.	
				Species targeted	Fishing methods	Fishing depth
				Western Australian salmon (<i>Arripis truttaceus</i>) Southern school whiting (<i>Sillago bassensis</i>) Australian herring (<i>Arripis georgianus</i>) King George whiting (<i>Sillaginodes punctatus</i>) Sea mullet (<i>Mugil cephalus</i>) Estuary cobbler (<i>Cnidoglanis macrocephalus</i>) Black bream (<i>Acanthopagrus butcheri</i>)	Beach seines, haul nets and gill nets.	Information not available.
				Fishing effort:	The total catch for 2018 was 243 t (Duffy and Blay, 2020b).	
				Active licences/vessels:	Number of vessels is unknown; however, 12 commercial fishers were employed in 2018 (Duffy and Blay, 2020b).	
West Coast Beach Bait Managed Fishery	-	-	-	Management area	Primarily active in the Bunbury areas in the SWMR.	
				Species targeted	Fishing methods	Fishing depth
				Whitebait	Beach-based haul nets.	Information not available.
				Fishing effort:	In recent years the fishery is primarily active in the Bunbury area. Total catch of whitebait in 2015 was 40.2 t (Duffy and Blay, 2020c).	

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Fishery	Woodside Activity Area			Description			
	Browse	NWS/S	NW Cape				
				Active licences/vessels: Number of vessels is unknown; however, only one license was issued (DPIRD, 2019).			
West Coast Demersal Gillnet and Demersal Longline (Interim) Managed Fishery	-	-	-	Management area The West Coast Demersal Gillnet and Demersal Longline (Interim) Managed Fishery (WCDGDLF) is part of the Temperate Demersal Gillnet and Demersal Longline Fishery (TDGDLF), which operates between 26° and 33° S, and the Joint Authority Southern Demersal Gillnet and Demersal Longline Managed Fishery (JASDGDLF), which operates from 33° S to the WA/SA border (Braccini and Blay, 2020).			
				Species targeted	Fishing methods	Fishing depth	
				Gummy shark (<i>Mustelus antarcticus</i>) Dusky shark (<i>Carcharhinus obscurus</i>) Whiskery shark (<i>Furgaleus macki</i>) Sandbar shark (<i>C. plumbeus</i>)	Gillnet and longline.	Information not available.	
				Fishing effort:	Catch estimated annual value of the fishery was \$0.2 million for 2017 to 2018 (Braccini and Blay, 2020).		
				Active licences/vessels:	Vessel numbers are unknown; however, 17 interim managed fishery permits were held in 2019 (DPIRD, 2019) and between 18 and 21 skippers and crew were employed between 2016 and 2017.		
West Coast Demersal Scalefish Fishery	-	-	-	Management area These fisheries include the West Coast Demersal Scalefish (Interim) Managed Fishery (51 boats), the West Coast Demersal Gillnet and Demersal Longline (Interim) Managed Fishery and the temperate Demersal Gillnet and Demersal Longline Fisheries. The West Coast Demersal Scalefish Managed Fishery is the main commercial fishery that targets demersal species in the West Coast Bioregion. It encompasses the waters from just south of Shark Bay down to just east of Augusta and extends seaward to the 200 nm boundary. The fishery is divided into four inshore management areas and one offshore management area.			
				Species targeted	Fishing methods	Fishing depth	
				Baldchin groper (<i>Choerodon rubescens</i>) Dhufish (<i>Glaucosoma hebraicum</i>) Pink snapper (<i>Pagrus auratus</i>)	Lines.	Inshore species – 20 to 250 m water depth.	

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				<p>Offshore species – more than 250 m water depth.</p> <p>Fishing effort: In 2016, the West Coast Demersal Scalefish (interim) Managed Fishery reported a total catch of 256 t.</p> <p>Active licences/vessels: The precise number of vessels in the West Coast Demersal Scalefish Fisheries is unreported; however, it is restricted to 60 interim managed fishery permit holders.</p>		
West Coast Purse Seine Managed Fishery	-	-	-	<p>Management area Located in waters from Cape Bouvard extending to Lancelin.</p>		
				<p>Species targeted</p>	<p>Fishing methods</p>	<p>Fishing depth</p>
				<p>Small pelagic finfish such as: Scaly mackerel (<i>Sardinella lemuru</i>) Pilchards (<i>Sardinops sagax</i>) Australian anchovy (<i>Engraulis australis</i>) Yellowtail scad (<i>Trachurus novaezelandiae</i>) Maray (<i>Etrumeus teres</i>)</p>	<p>Purse seine.</p>	<p>Information not available.</p>
				<p>Fishing effort: Information not available</p>	<p>Active licences/vessels: Seven vessels in 2017 (Gaughan and Santoro, 2018).</p>	
West Coast Rock Lobster Managed Fishery			✓	<p>Management area The West Coast Rock Lobster Fishery operates from Shark Bay south to Cape Leeuwin. The fishery is managed using zones, seasons and total allowable catch. The recreational fishery targets the western rock lobsters using baited pots and by diving between North-west Cape and Augusta.</p>		

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				Species targeted	Fishing methods	Fishing depth
				Western rock lobster (<i>Panulirus cygnus</i>)	Baited pots.	Less than 20 m.
				Fishing effort:	In 2018, 234 vessels reported a total catch of 6400 t in 2017 (de Lestang <i>et al.</i> , 2018). In 2016, 226 vessels reported a total catch of 6,086 t (Gaughan and Santoro, 2018).	
				Active licences/vessels:	234 vessels operated in 2017 and 233 vessels operated in 2018 (Gaughan and Santoro, 2018).	

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11.5.2 Aquaculture

Aquaculture operations in the northwest are typically restricted to inland and shallow coastal waters.

West Coast Bioregion

Aquaculture activities in the West Coast bioregion, defined by the Department of Primary Industries and Regional Development (DPIRD) (as the government body responsible management of primary industries in WA) are focused on blue mussels and edible oysters (mainly in Cockburn Sound) and marine algae for production of beta-carotene, used as a food additive and as a nutritional supplement. Offshore marine finfish production is also being developed, initially focusing on yellowtail kingfish.

There is also an emerging black pearl industry (from the *Pinctada margaritifera* oyster) in the Abrolhos Islands. As well as expansion in the production of Akoya pearls (small white pearls from *Pinctada fucata martensi*), *Pinctada albina* (small, yellow pearls) and *Pteria penguin*, which are often used to produce half (mabe) pearls in pink and bluish shades.

Aquaculture licences for producing coral and live rock (pieces of old coral reefs colonised by marine life, such as beneficial bacteria, for aquariums) at the Abrolhos Islands have also been issued and other applications are being assessed.

Gascoyne Coast Bioregion

In the Gascoyne Coast bioregion, aquaculture activities are focused on the blacklip oyster (*Pinctada margaritifera*) and Akoya pearl oyster (*Pinctada imbricata*) (Gaughan and Santoro, 2020). Several hatcheries supply *P. margaritifera* juveniles to the region's developing black pearl farms.

Other aquaculture developments in the Gascoyne Coast bioregion include emerging producers of coral and live rock species for aquariums.

North Coast Bioregion

Aquaculture activities in the North Coast bioregion is dominated by the production of pearls. A large number of pearl oysters for seeding are obtained from wild stocks and supplemented by hatchery produced oysters, with major hatcheries operating at Broome and around the Dampier Peninsula (Gaughan and Santoro, 2018). Primary spawning of the pearl oyster occurs from mid-October to December. A smaller secondary spawning occurs in February and March (Gaughan and Santoro, 2020).

Other aquaculture developments in the North Coast include emerging producers of coral and live rock species for aquariums as well as barramundi (*Lates calcarifer*) farms and microalgae culturing for Omega-3, biofuels and protein biomass (Gaughan and Santoro, 2020).

11.6 Fisheries – Traditional

Traditional or customary fisheries are typically restricted to shallow coastal waters and/or areas with structures such as reef.

Dugong, fish and marine turtles that move between coastal and Commonwealth waters are important components of the Aboriginal people's culture and diet. Aboriginal people continue to actively manage their sea country in coastal waters of WA in order to protect and manage the marine environment, its resources and cultural values.

Indonesian fishers can fish within designated areas under the Australia-Indonesia Memorandum of Understanding regarding the Operations of Indonesian Traditional Fishermen in Areas of the Australian Fishing Zone and Continental Shelf – 1974 (MoU 74). Traditional fishing is allowed within the MoU Box (**Figure 11-1**), which encompasses: Ashmore Reef (Pulau Pasir), Cartier Island (Pulau Baru), Seringapatam Reef (Afringan), Scott Reef (Pulau Dato) and Browse Island (Berselan). Restrictions have since been introduced around Ashmore Reef and Cartier Island following their

designation as Nature Reserves under the Commonwealth's *National Parks and Wildlife Conservation Act 1975* in 1983 and 2000, respectively.

The MoU allows Indonesian fishers to fish in designated areas using traditional methods only. These methods include reef gleaning, free-diving, hand lining and other non-mechanised methods. Scott Reef is currently the principal reef in the MoU 74 Box and is utilised seasonally by Indonesian fishers to harvest trepang, trochus shells and other reef species. The peak season is July to October due to more favourable wind conditions, and to allow fishers to sun dry their catch on their boat decks (ERM, 2009). Browse Island is also frequently visited by shark fishers who mostly fish along the eastern margin of the MoU 74 Box.

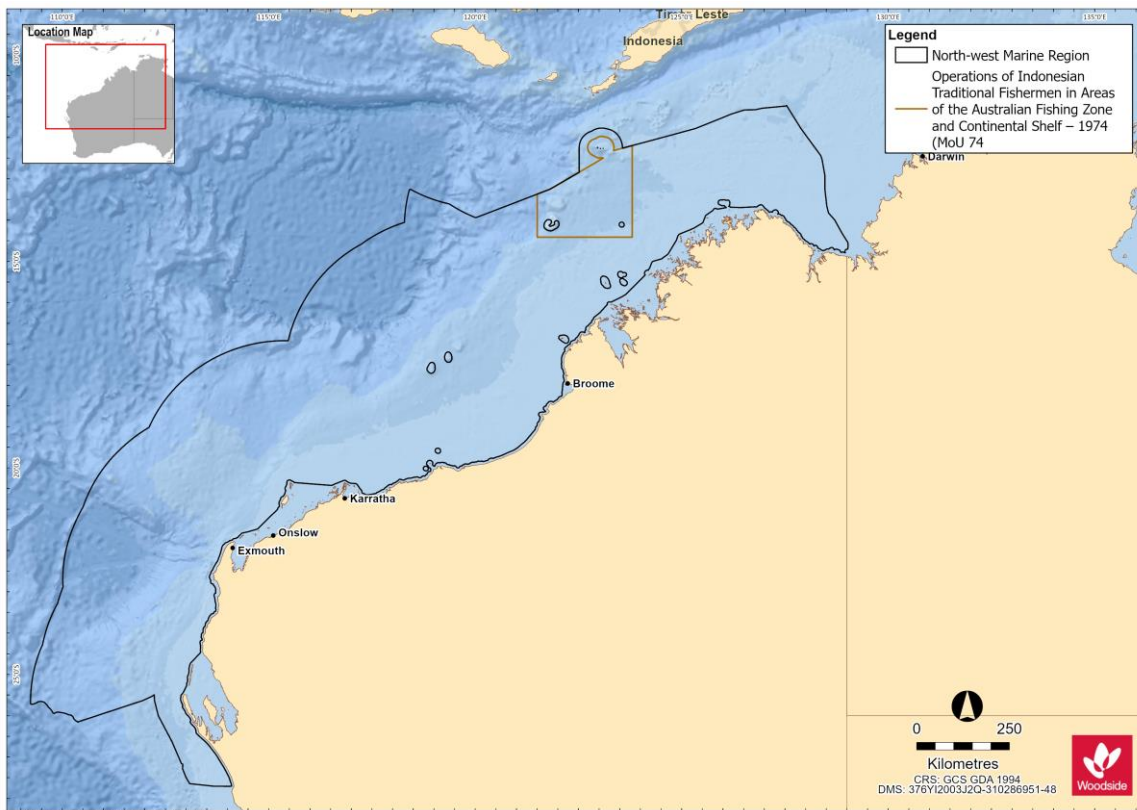


Figure 11-1 MOU 74 Box. Operations of Indonesian Traditional Fishermen in Areas of the Australian Fishing Zone and Continental Shelf – 1974

11.7 Tourism and Recreation

There are growing tourism and recreational sectors in WA. The Kimberley, Pilbara and Gascoyne regions are popular visitor destinations for Australian and international tourists. Tourism is concentrated in the vicinity of population centres including Broome, Dampier, Exmouth, Coral Bay and Shark Bay.

Recreational and tourism activities include: charter fishing, other recreational fishing, diving, snorkelling, marine fauna watching, and yachting.

11.7.1 Gascoyne Region

Outside the petroleum industry, tourism is the largest revenue earner of all the major industries of the Gascoyne region. It contributes significantly to the local economy in terms of both income and

employment. In 2018 there was an average of 337,400 visitors with a visitor spend of \$359 million (Gascoyne Development Commission¹¹).

In 2018-19, the Ningaloo region (Ningaloo Reef and the surrounding coastal region Exmouth Gulf, communities of Exmouth and Coral Bay, and adjacent proposed southern coastal reserves and pastoral leases) contributed an estimated \$110 million in value added to the WA economy (DCBA, 2020). Ningaloo's economic contribution to WA is attributed to four key types of economic activity, tourism expenditure by international, interstate and WA visitors to the Ningaloo region, commercial fishing in the Exmouth Gulf, recreation activity involving the Reef by residents of the Ningaloo region and management and research relating to the Reef (DCBA, 2020). More than 90% of this value added is attributed to the domestic and international tourists who visit Ningaloo each year (DCBA, 2020). The main marine nature-based tourist activities are concentrated around and within the Ningaloo WHA.

11.7.2 Pilbara region

Recreation and tourism activities within the Pilbara are of high social value. Tourism is a key economic driver for the Pilbara with more than 1 million visitors to the region every year, generating \$413 million in gross revenue annually (Pilbara Development Commission¹²).

Recreational fishing within the Pilbara region tends to be concentrated in State waters adjacent to population centres. Recreational fishing is known to occur around the Dampier Archipelago with boats launched from boat ramps around Dampier and Karratha (Williamson *et al.*, 2006). Once at sea, charter vessels may also frequent the waters surrounding the Montebello Islands.

11.7.3 Kimberley Region

Recreation and tourism activities in the Kimberley region occur predominantly in WA State waters (extending offshore 3 nm from the mainland), adjacent to coastal population centres (e.g. Broome), with a peak in activity during the winter months (dry season). These activities include recreational fishing, diving, snorkelling, wildlife watching and boating.

Primary dive locations in the Kimberley region include the Rowley Shoals, including Mermaid Reef AMP, Scott Reef, Seringapatam Reef, Ashmore Reef AMP and Cartier Island.

11.8 Shipping

Commercial shipping traffic is high within the NWMR with vessel activities including commercial fisheries, tourism such as cruises, international shipping and oil and gas operations. There are 12 ports adjacent to the NWMR, including the major ports of Dampier, Port Hedland and Broome, which are operated by their respective port authorities. These ports handle large tonnages of iron ore and petroleum exports in addition to salt, manganese, feldspar chromite and copper (DEWHA, 2008).

Heavy vessel traffic exists within the Pilbara Port Authority management area which recorded 10,064 vessel movements in Port of Dampier 2019/20 annual reporting period (PPA, 2020). Twenty-six designated anchorages for bulk carriers, petroleum and gas tankers, drilling rigs, offshore platforms, and pipelay vessels are located offshore of Rosemary Island.

In 2012, AMSA established a network of shipping fairways off the northwest coast of Australia. The shipping fairways, while not mandatory, aim to reduce the risk of collision between transiting vessels and offshore infrastructure. The fairways are intended to direct large vessels such as bulk carriers and LNG ships trading to the major ports into pre-defined routes to keep them clear of existing and planned offshore infrastructure (AMSA, 2013).

¹¹ <https://www.gdc.wa.gov.au/industry-profiles/tourism/>

¹² <https://www.pdc.wa.gov.au/our-focus/strategicinitiatives/tourism>

11.9 Oil and Gas Infrastructure

The NWMR supports a number of industries including petroleum exploration and production.

Within the NWMR there are seven sedimentary petroleum basins: Northern and Southern Carnarvon basins, Perth, Browse, Roebuck, Offshore Canning and Bonaparte basins. Of these, the Northern Carnarvon, Browse and Bonaparte basins hold large quantities of gas and comprise most of Australia's reserves of natural gas (DEWHA, 2008), which is reflected by the level of development in the area. In addition to existing facilities, there are proposed developments in the region. This includes proposals to develop gas and condensate from a number of fields within the NWMR.

In addition to the oil and gas industry, other land-based industries depend upon the marine environment in the nearshore area. These include ports, salt mines such as Karratha and Onslow, LNG onshore processing facilities such as Burrup Hub, Thevenard Island, Barrow Island, Varanus Island, and small-scale desalination plants at Barrow Island, Burrup, Cape Preston, and Onslow.

11.10 Defence

Key Australian Department of Defence (DoD) operational areas and facilities areas of the NWMR for training and operational activities, include:

- An operating logistics base has been established in Dampier to support vessels patrolling the waters around offshore oil and gas facilities. A dedicated navy administrative support facility is also being constructed at the nearby township of Karratha.
- The Royal Australian Air Force currently maintains two 'bare bases' in remote areas of WA that are used for military exercises. One of these is the Royal Australian Air Force Base in Learmonth. The Royal Australian Air Force maintains the Commonwealth Heritage listed Learmonth Air Weapons Range Facility, which is located between Ningaloo Station and the Cape Range National Park. The air training area associated with the Learmonth base extends over the offshore region.
- The Royal Australian Air Force Base Curtin is located on the north coast of WA, south-east of Derby and 170 km east of Broome. It provides support for land, air and sea operations aimed to support Australia's northern approaches.
- The Naval Communications Station Harold E. Holt is located ~6 km north of Exmouth. The main role of the station is to communicate at very low frequencies (19.8 kHz) with Australian and United States submarines and ships in the eastern Indian Ocean and the western Pacific Ocean.

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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: 21-Jul-2023

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	1
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	20
Listed Migratory Species:	33

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:	24
Whales and Other Cetaceans:	29
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	1
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	26
Key Ecological Features (Marine):	2
Biologically Important Areas:	4
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

EEZ and Territorial Sea

Listed Threatened Species

[\[Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name

Threatened Category

Presence Text

BIRD

[Calidris canutus](#)

Red Knot, Knot [855]

Endangered

Species or species habitat may occur within area

[Calidris ferruginea](#)

Curlew Sandpiper [856]

Critically Endangered

Species or species habitat may occur within area

[Macronectes giganteus](#)

Southern Giant-Petrel, Southern Giant Petrel [1060]

Endangered

Species or species habitat may occur within area

[Numenius madagascariensis](#)

Eastern Curlew, Far Eastern Curlew [847]

Critically Endangered

Species or species habitat may occur within area

[Phaethon lepturus fulvus](#)

Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]

Endangered

Species or species habitat may occur within area

[Pterodroma mollis](#)

Soft-plumaged Petrel [1036]

Vulnerable

Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
FISH		
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area
MAMMAL		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat may occur within area
REPTILE		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Congregation or aggregation known to occur within area
SHARK		
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat may occur within area
Listed Migratory Species [Resource Information]		
Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	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

Scientific Name	Threatened Category	Presence Text
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat may 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
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Congregation or aggregation known to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]		Species or species habitat may occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Sousa sahalensis as Sousa chinensis Australian Humpback Dolphin [87942]		Species or species habitat may occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
Reptile		
Aipysurus laevis Olive Seasnake [1120]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Disteira kingii Spectacled Seasnake [1123]		Species or species habitat may occur within area
Disteira major Olive-headed Seasnake [1124]		Species or species habitat may occur within area
Ephalophis greyi North-western Mangrove Seasnake [1127]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Congregation or aggregation known to occur within area
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

Whales and Other Cetaceans [Resource Information]

Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat 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]		Species or species habitat likely to occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]		Species or species habitat may occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Sousa sahulensis Australian Humpback Dolphin [87942]		Species or species habitat may occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat may occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks		[Resource Information]
Park Name	Zone & IUCN Categories	
Gascoyne	Multiple Use Zone (IUCN VI)	

Extra Information

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	
Controlled action				
Development of Stybarrow petroleum field incl drilling and facility installation	2004/1469	Controlled Action	Post-Approval	
Enfield full field development	2001/257	Controlled Action	Post-Approval	
Greater Enfield (Vincent) Development	2005/2110	Controlled Action	Post-Approval	
Pyrenees Oil Fields Development	2005/2034	Controlled Action	Post-Approval	

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Bultaco-2, Laverda-2, Laverda-3 and Montesa-2 Appraisal Wells	2000/103	Not Controlled Action	Completed
Carnarvon 3D Marine Seismic Survey	2004/1890	Not Controlled Action	Completed
Exploratory drilling in permit area WA-225-P	2001/490	Not Controlled Action	Completed
Montesa-1 and Bultaco-1 Exploration Wells	2000/102	Not Controlled Action	Completed
Subsea Gas Pipeline From Stybarrow Field to Griffin Venture Gas Export Pipeline	2005/2033	Not Controlled Action	Completed
Not controlled action (particular manner)			
3D Seismic Survey, WA	2008/4428	Not Controlled Action (Particular Manner)	Post-Approval
CVG 3D Marine Seismic Survey	2012/6654	Not Controlled Action (Particular Manner)	Post-Approval
Deep Water Northwest Shelf 2D Seismic Survey	2007/3260	Not Controlled Action (Particular Manner)	Post-Approval
Eendracht Multi-Client 3D Marine Seismic Survey	2009/4749	Not Controlled Action (Particular Manner)	Post-Approval
Enfield M3 & Vincent 4D Marine Seismic Surveys	2008/3981	Not Controlled Action (Particular Manner)	Completed
Enfield M3 4D, Vincent 4D & 4D Line Test Marine Seismic Surveys	2008/4122	Not Controlled Action (Particular Manner)	Post-Approval
Enfield oilfield 3D Seismic Survey	2006/3132	Not Controlled Action (Particular Manner)	Post-Approval
Laverda 3D Marine Seismic Survey and Vincent M1 4D Marine Seismic Survey	2010/5415	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Rydal-1 Petroleum Exploration Well, WA	2012/6522	Not Controlled Action (Particular Manner)	Post-Approval
Stybarrow 4D Marine Seismic Survey	2011/5810	Not Controlled Action (Particular Manner)	Post-Approval
Stybarrow Baseline 4D marine seismic survey	2008/4530	Not Controlled Action (Particular Manner)	Post-Approval
Vincent M1 and Enfield M5 4D Marine Seismic Survey	2010/5720	Not Controlled Action (Particular Manner)	Post-Approval
Warramunga Non-Inclusive 3D Seismic Survey	2008/4553	Not Controlled Action (Particular Manner)	Post-Approval
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval

Referral decision

CVG 3D Marine Seismic Survey	2012/6270	Referral Decision	Completed
Enfield 4D Marine Seismic Surveys, Production Permit WA-28-L	2005/2370	Referral Decision	Completed
Stybarrow Baseline 4D Marine Seismic Survey (Permit Areas WA-255-P, WA-32-L, WA-	2008/4165	Referral Decision	Completed

Key Ecological Features [\[Resource Information \]](#)

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
Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula	North-west
Continental Slope Demersal Fish Communities	North-west

Biologically Important Areas

Scientific Name	Behaviour	Presence
Seabirds		

Scientific Name	Behaviour	Presence
Ardena pacifica Wedge-tailed Shearwater [84292]	Breeding	Known to occur
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Distribution	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Migration	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Migration (north and south)	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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Appendix E Program of Ongoing Engagement with Traditional Custodians

Proposed Program of Ongoing Engagement with Traditional Custodians

This Program of Ongoing Engagement with Traditional Custodians (“Program”) has been developed to demonstrate Woodside’s commitment to ongoing engagement and support of Traditional Custodians’ capacity to care for and manage Country, including Sea Country, and has been directly informed by Traditional Custodians’ feedback regarding their capacity to engage and consult on Environment Plans.

It is a living document designed to evolve with ongoing consultation and feedback from Traditional Custodians and, at a minimum, will be subject to annual review. In addition to this Program, Woodside will continue to participate in, and support collective industry engagement with Traditional Owners on the development of a future, sustainable, industry wide Program. Through the Program, Woodside actively supports Traditional Custodians’ capacity for, and involvement in, ongoing engagement and feedback on environment plans.

The Program has been developed so that Traditional Custodians can, on an ongoing basis, provide Woodside with feedback relating to the possible consequences of an activity to be carried out under an environment plan on their functions, interests and activities as they relate to cultural values. This feedback will be evaluated in conjunction with Traditional Custodians and, where necessary, avoidance or mitigation strategies will be developed in collaboration with Traditional Custodians. How the Program is implemented with specific Traditional Custodians will depend on their stated needs and priorities.

The Program is underpinned by Woodside’s First Nations Communities Policy (woodside.com), the objective of which is to ensure Woodside partners and engages with First Nations communities to create positive economic, social and cultural outcomes that leave a lasting legacy. Woodside does this through building respectful relationships and partnerships with First Nations communities where we are active, in the areas where they are most interested in. We acknowledge the unique connection that First Nations communities have to land, waters and the environment.

The Program will include, as agreed with relevant communities, reasonable commitment to:

1. Support for ongoing dialogue and engagement

Woodside will support the capacity of Traditional Custodians to participate in ongoing dialogue and engagement about the environment plans and to enable the ongoing and future identification of cultural values potentially impacted by Woodside’s activities. Woodside further commits to agreeing consultation protocols with individual Traditional Custodians to ensure the material provided is appropriate in level of detail such that the potential for cultural impact from Woodside activities can be determined and as required measures can be adopted to avoid or minimise impact.

In addition, Woodside will receive feedback on cultural values from an individual person or organisation that identifies as a Traditional Custodian, at any stage during the development and implementation of activities. This feedback will be evaluated, in conjunction with the Traditional Custodian individual or group and if required, control measures will be put in place to avoid impacts to cultural values, or where avoidance is not possible, to minimise and mitigate the impacts to an acceptable level.

Where cultural values are identified post activity completion, any controls relevant to value management will be implemented during the next relevant activity.

2. Support for the identification and recording of cultural features

Woodside will support Traditional Custodians to record and articulate their Sea Country values and will invest in cultural assessments codesigned with Traditional Custodians, where required, to inform potential risks to cultural values from our petroleum activities.

This may include supporting cultural mapping by Traditional Custodians to identify and map significant cultural features including archaeological sites and other cultural values. The scoping of the mapping process will be codesigned with Traditional Custodians.

Woodside understands that cultural knowledge remains the intellectual property of Traditional Custodians and will agree with Traditional Custodians at the outset how that information from surveys will be used to feedback into and inform the environment plan's design and implementation.

In addition, Woodside applies the Cultural Heritage Management Procedure 2019, updated in 2023, to the Program which:

- provides a process for the identification, protection, and management of Cultural Heritage taking into account relevant standards, in particular, the United Nations Declaration on the Rights of Indigenous Peoples, the Charter for the Protection and Management of the Archaeological Heritage, the Convention for the Safeguarding of the Intangible Cultural Heritage, and the Convention on the Protection of the Underwater Cultural Heritage;
- applies to underwater cultural heritage and, consistent with current practice, provides for the commissioning of (where appropriate) both archaeological and ethnographic assessments of cultural values over the submerged landscape; and
- the process includes the following:
 - early engagement with relevant Traditional Custodians
 - identification of potential heritage, this could include desktop and field surveys undertaken with the Traditional Custodians.
- the development of cultural management strategies; and, where it is determined cultural heritage may be impacted, the development of Cultural Heritage Management Plans codesigned with Traditional Custodians and implemented by Woodside's First Nations team which:
 - focus on avoidance or minimisation of impacts; and
 - provide regular reviews and for inclusion of new information and further development of the Cultural Heritage Management Plan.

Woodside is committed to continue to receive feedback on cultural values for the life of an environment plan, the inclusion of new information and the development of avoidance or mitigation strategies in collaboration with Traditional Custodians. This information will be recorded via the Woodside Management of Knowledge Process and any potential impacts to the accepted Environment Plan evaluated via the Woodside Management of Change Process.

3. Building capacity for the ongoing protection of country

Woodside will support measures to increase the capability and capacity of the Traditional Custodian groups. This is guided by Woodside's Indigenous Affairs Strategy 2019 ("Strategy"), which is designed to enable the building and maintaining of relationships with Traditional Custodians to leave a lasting legacy, including strengthening of Traditional Custodians' capacity to care for and manage Country, including Sea Country. The Strategy was developed with inputs from Traditional Custodians and contains four pillars that direct Woodside's social investment, policies relating to economic development, procurement and employment, and Woodside's agreement making and implementation of agreements. The pillars are:

1. Culture and Heritage Management: support social outcomes through protection, recognition and respect for culture and heritage;
2. Economic Participation: provide training, jobs, and business opportunities;

3. Capability and capacity: ensure strong corporate governance, leadership development and education initiatives to support self-determination; and
4. Safer and Healthier Communities: partner with Aboriginal people and service providers to maximise safer and healthier community outcomes.

Woodside is committed to an ongoing relationship between Woodside and the Traditional Custodian groups. Through consultation with Traditional Custodians Woodside will continue to:

- establish support for Indigenous ranger programs via social investment;
- establish support for Indigenous oil spill response capability via investigating training models;
- establish support for identification and recording of cultural values and the management of that information by Traditional Custodians;
- establish support for programs identified by the Traditional Custodians as important to them and as agreed by Woodside.

4. Support for capacity and capability in relation to governance

Pillar 3 of the Indigenous Affairs Strategy 2019 focuses on ensuring strong corporate governance, leadership development and education initiatives to support self-determination. To enable this, Woodside will support measures to increase the capability and capacity of the Traditional Custodian groups, including in relation to governance and management systems.

The nature of this support will be informed by the individual needs of Traditional Custodian groups, but may include:

- funding or other support for community meetings, particularly where consultation with representative bodies lies outside of that body's core business and cultural authority or mandate needs to be secured,
- resourcing internal expertise so that information is managed consistently and internally, including ensuring appropriate record keeping of consultation to provide stakeholders with a lasting record of discussions, and
- development or upgrade of IT systems to manage information.

5. Program Reporting and Review of Effectiveness

Woodside will undertake an annual review of the Program to assess its effectiveness and adapt the Program accordingly. The annual review will also include an assessment of appropriateness of the methods used to undertake ongoing consultation with Traditional Custodians.

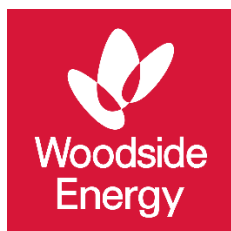
Progress of the Program will be reported annually in line with annual sustainability reporting via the Woodside website.

6. Current Status

Following distribution of this proposed Program, Woodside is now participating in a number of specific ongoing consultation activities with Traditional Custodian Relevant Persons. Specific ongoing activities are tabulated below:

Traditional Custodian Relevant Person	Ongoing Consultation Description	Forward Plan	Estimated Timeframes
Yamatji Marlpa Aboriginal Corporation (YMAC)	<p>In June 2023, YMAC provided Woodside a proposed draft Framework Agreement, and a proposal to fund in-house expertise to support consultation and implement the Collaboration Framework.</p> <p>In July 2023, Woodside agreed in principle to the proposed Consultation Framework and the funding proposal and requested a meeting to work together on details. Woodside provided the Proposed Program of Ongoing Consultation to complement the proposed Consultation Framework.</p>	<p>Woodside will continue to communicate with YMAC, seeking to collaborate and reach agreement on the proposed Consultation Framework and funding agreement. At the point of EP submission, Woodside is seeking a meeting with YMAC at YMAC's earliest convenience.</p>	<p>Woodside will follow up with YMAC on a monthly basis for at least six months, seeking to progress the Consultation Framework and funding agreement.</p>
Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC)	<p>In a meeting during August 2023, NTGAC proposed a Framework Agreement. This included terms for ongoing engagement such as frequency of consultation, participation, and content.</p> <p>NTGAC has also requested Woodside provide funding for an in-house environmental scientist to review material. Woodside agreed in principle to this approach, and has requested a first draft of the Framework Agreement for consideration. Woodside have agreed to pay for YMAC's in-house scientist to attend NTGAC meetings to advise NTGAC.</p>	<p>Woodside and NTGAC/YMAC have agreed in writing to develop a Framework Agreement. Woodside have been responding to queries from NTGAC who have passed information provided by Woodside onto their Environmental Scientist. Woodside are awaiting a proposed draft of a Framework Agreement and general report. YMAC's preference is to prepare the drafts, Woodside have offered to assist with drafting and remain ready to respond on receipt of documents.</p>	<p>Woodside will follow up with NTGAC on a monthly basis for at least six months, seeking to progress the Framework Agreement and general report.</p>
Yinggarda Aboriginal Corporation (YAC)	<p>In August 2023, YAC requested Woodside provide a draft Framework Agreement for their consideration. Woodside has provided a draft Framework Agreement to YAC for review.</p>	<p>Woodside's Proposal suggests meeting with YAC every 3 months to progress matters. The Proposal suggests committing to work continuing between meetings with each party nominating focal points. A Scope of Work and schedule of rates is included to re-imburse the cost of ongoing consultation. Woodside's Proposal includes timeframes for anticipated milestones and has suggested the Proposal be in place for an initial 2-year period. Woodside has provided the draft Framework Agreement to YAC; they have advised that they will seek direction from the YAC Board on the proposal.</p>	<p>Woodside will continue following up with YAC on a monthly basis for at least six months, seeking to progress the Framework Agreement.</p>

Appendix F Relevant Persons Consultation



Appendix F – Stybarrow End State Decommissioning Environment Plan

Date: April 2024

Revision: 2

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Table 1: Consultation Report with Relevant Persons or Organisations

Commonwealth and WA State Government Departments or Agencies – Marine
Australian Fisheries Management Authority (AFMA)
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with AFMA for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 6.4 of the EP. Specifically:</p> <ul style="list-style-type: none">• Consultation Information Sheet was publicly available on the BHP website in May 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.• Consultation information provided to AFMA on 27 May 2022 based on their function, interest and activities.• Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, North West Telegraph, Pilbara News, Midwest Times (15 February 2023) and the Geraldton Guardian (17 February 2023) advising of the proposed activities and requesting comments or feedback.• Woodside has addressed and responded to AFMA over a 23-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none">• On 27 May 2022, Woodside emailed AFMA and provided the Stybarrow P&A and Decommissioning Environment Plans Fact Sheet (Appendix F, reference 1.3).• On 1 June 2022, AFMA responded by email and provided the following response:<ul style="list-style-type: none">○ AFMA did not have any specific comment on proposed activities.○ AFMA noted it was important to consult with all operators who have entitlements to fish within the proposed area, which could be done through the relevant fishing industry associations or directly with operators who hold entitlements in the area.○ AFMA provided details on representative organisations and how to obtain contact details for licence holders.• On 27 July 2022, Woodside responded and noted AFMA did not have any specific comment on proposed activities and re-confirmed it had consulted licence holders in the Western Deepwater Trawl Fishery and consulted representative organisations and licence holders as per AFMA contact details.• On 16 February 2023, Woodside emailed AFMA advising of the proposed activity (Appendix F, reference 2.11) and provided a Consultation Information Sheet.• On 10 March 2023, Woodside sent a reminder email to AFMA advising of the proposed activity (Appendix F, reference 3.12) and provided a Consultation Information Sheet.• On 27 March 2023, AFMA responded advising that it has no specific comment on the proposal and that it is important to consult with all fishers who have entitlements to fish within the proposed area, which can be done through the relevant fishing industry associations or directly with fishers who hold entitlements in the area. AFMA also provided contact details for fishery associations, as well as for obtaining individual contact details for licence holders.• On 2 April 2023, Woodside responded and thanked AFMA for its feedback and confirmed that it had provided information to relevant fishery licence holders as well as representative organisations on behalf of Commonwealth fishery licence holders who have entitlements to fish within the proposed area. <p>As stated, the summary above demonstrates that Woodside's consultation with AFMA for the purpose of regulation 25 is complete. However, as per Woodside's ongoing commitment to consultation, engagement with AFMA continues as summarised below:</p> <p>Ongoing consultation:</p> <ul style="list-style-type: none">• On 22 May 2023, Woodside emailed AFMA requesting Commonwealth fishery licence holder contact details unrelated to this proposed activity.• On 30 May 2023, AFMA responded to advise there will be a change in providing this information. In a further follow up email on the same day, AFMA advised there is a fee payable for this information and a need to sign a Deed of Confidentiality.

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<ul style="list-style-type: none"> On 17 July 2023, an agreement was reached with AFMA for Woodside to consult directly with Commonwealth fisheries as per contact details provided by AFMA under the new Deed of Confidentiality. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>AFMA has requested Woodside consult with operators who have entitlements to fish within the proposed area.</p> <p>AFMA does not have any specific comment on the proposed activities.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>Woodside has addressed AFMA's feedback, including noting AFMA did not have any specific feedback related to this EP, providing information to relevant fishery licence holders as well as representative organisations on behalf of Commonwealth fishery licence holders who have entitlements to fish within the proposed area.</p> <p>Woodside has provided consultation information to AFMA, DAFF - Fisheries, CFA, ASBTIA, Tuna Australia and individual relevant licence holders.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 5.6.2 of this EP.</p> <p>Woodside will notify relevant State and Commonwealth fisheries of infrastructure being left <i>in situ</i> (Western Deepwater Trawl Fishery) as per PS 1.3 of this EP.</p> <p>No additional measures or controls are required.</p>
Australian Hydrographic Office (AHO)		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with AHO for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 6.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet was publicly available on the BHP website in May 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023. Consultation information provided to AHO on 27 May 2022 based on their function, interest and activities. Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, North West Telegraph, Pilbara News, Midwest Times (15 February 2023) and the Geraldton Guardian (17 February 2023) advising of the proposed activities and requesting comments or feedback. Woodside has addressed and responded to AHO over a 23-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 27 May 2022, Woodside emailed AHO and provided the Stybarrow P&A and Decommissioning Environment Plans Fact Sheet (Appendix F, reference 1.2). On 16 February 2023, Woodside emailed the AHO advising of the proposed activity (Appendix F, reference 2.7) and provided a Consultation Information Sheet. On 17 February 2023, the AHO responded and acknowledged receipt of Woodside's consultation email. On 15 March 2023, Woodside sent a reminder email to AHO advising of the proposed activity (Appendix F, reference 3.19) and provided a Consultation Information Sheet. On 15 March 2023, AHO responded to Woodside and acknowledged receipt of Woodside's consultation email. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan

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<p>AHO acknowledged receipt of consultation emails.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>Woodside notes the AHO has acknowledged receipt of consultation emails.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p>	<p>Woodside will notify the AHO of infrastructure remaining <i>in situ</i> to ensure the infrastructure will continue to be marked on navigation charts as per PS 1.2 of this EP.</p> <p>No additional measures or controls are required.</p>
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Department of Climate Change, Energy, the Environment and Water Agriculture (DCCEEW) / Department of Agriculture, Fisheries and Forestry (DAFF) – Fisheries (formerly DAWE)

<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with DCCEEW for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 6.4 of the EP. Specifically:</p>		
<ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in May 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023. • Consultation information provided to DCCEEW / DAFF on 27 May 2022 based on their function, interest and activities. • Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, North West Telegraph, Pilbara News, Midwest Times (15 February 2023) and the Geraldton Guardian (17 February 2023) advising of the proposed activities and requesting comments or feedback. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided DCCEEW / DAFF with the opportunity to provide feedback over a 23-month period. 		
<p>Summary of information provided and record of consultation:</p>		
<ul style="list-style-type: none"> • On 27 May 2022, Woodside emailed DAFF – Fisheries and provided the Stybarrow P&A and Decommissioning Environment Plans Fact Sheet (Appendix F, reference 1.10). • On 16 February 2023, Woodside emailed DCCEEW / DAFF advising of the proposed activity (Appendix F, reference 2.13) and provided a Consultation Information Sheet. • On 10 March 2023, Woodside sent a reminder email to DCCEEW / DAFF advising of the proposed activity (Appendix F, reference 3.1) and provided a Consultation Information Sheet. 		

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside has provided consultation information to AFMA, DAFF – Fisheries, CFA, ASBTIA, Tuna Australia and individual relevant licence holders.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p>	<p>The Environment Plan demonstrates that the EMBA is located outside the boundaries of a proclaimed Commonwealth Marine Park and identifies that there are no credible impacts to the values of any Commonwealth Marine Parks as a result of the petroleum activity (Section 5.4).</p> <p>The Environment Plan demonstrates that there are no known underwater heritage sites or shipwrecks within the EMBA and identifies that there are no credible impacts to the values of any underwater heritage or</p>

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		<p>shipwrecks as a result of the petroleum activity (Section 5.6.1).</p> <p>Woodside will notify relevant State and Commonwealth fisheries of infrastructure remaining <i>in situ</i> (Western Deepwater Trawl Fishery) as per PS 1.3 of this EP.</p> <p>No additional measures or controls are required.</p>
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Department of Defence (DoD)

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Department of Defence for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 6.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in May 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Consultation information provided to DoD on 27 May 2022 based on their function, interest and activities.
- Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, North West Telegraph, Pilbara News, Midwest Times (15 February 2023) and the Geraldton Guardian (17 February 2023) advising of the proposed activities and requesting comments or feedback.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided DoD with the opportunity to provide feedback over a 23-month period.

Summary of information provided and record of consultation:

- On 27 May 2022, Woodside emailed DoD and provided the Stybarrow P&A and Decommissioning Environment Plans Fact Sheet (Appendix F, reference 1.11).
- On 16 February 2023, Woodside emailed DoD advising of the proposed activity (Appendix F, reference 2.8) and provided a Consultation Information Sheet.
- On 8 March 2023, Woodside emailed DoD following up on the proposed activity and provided a Defence map (Appendix F, reference 3.20).

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).	No additional measures or controls are required.

Department of Primary Industries and Regional Development (DPIRD)

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with DPIRD for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 6.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in May 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.

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- Consultation information provided to DPIRD on 27 May 2022 based on their function, interest and activities.
 - Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, North West Telegraph, Pilbara News, Midwest Times (15 February 2023) and the Geraldton Guardian (17 February 2023) advising of the proposed activities and requesting comments or feedback.
 - Woodside has sent a follow up email seeking feedback on the proposed activities.
 - Woodside has provided DPIRD with the opportunity to provide feedback over a 19-month period.
- Summary of information provided and record of consultation:**
- On 27 May 2022, Woodside emailed DPIRD and provided the Stybarrow P&A and Decommissioning Environment Plans Fact Sheet (Appendix F, reference 1.12).
 - On 16 February 2023, Woodside emailed DPIRD advising of the proposed activity (Appendix F, reference 2.12) and provided a Consultation Information Sheet.
 - On 10 March 2023, Woodside sent a reminder email to DPIRD advising of the proposed activity (Appendix F, reference 3.13) and provided a Consultation Information Sheet.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	<p>Woodside has provided consultation information to DPIRD, WAFIC and individual relevant licence holders.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 5.6.2 of this EP.</p> <p>Woodside will notify relevant State and Commonwealth fisheries of infrastructure remaining <i>in situ</i> (Western Deepwater Trawl Fishery) as per PS 1.3 of this EP.</p> <p>No additional measures or controls are required.</p>

Commonwealth and WA State Government Departments or Agencies – Environment

Department of Climate Change, Energy, the Environment and Water Agriculture (DCCEE) – Sea Dumping Branch (formerly DAWE – Sea Dumping Branch)

- Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with DCCEE Sea Dumping for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 6.4 of the EP. Specifically:
- Consultation Information Sheet was publicly available on the BHP website in May 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
 - Consultation information provided to DCCEE on 30 November 2021 based on their function, interest and activities.
 - Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, North West Telegraph, Pilbara News, Midwest Times (15 February 2023) and the Geraldton Guardian (17 February 2023) advising of the proposed activities and requesting comments or feedback.
 - Woodside has sent a follow up email seeking feedback on the proposed activities.
 - Woodside has provided DCCEE with the opportunity to provide feedback over a 23-month period.

Summary of information provided and record of consultation:

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<ul style="list-style-type: none"> On 30 November 2021, Woodside met with DAWE – Sea Dumping Branch and provided a general overview of Stybarrow decommissioning plans. Woodside sought to understand Sea Dumping permit requirements and upcoming draft guidance issuance and consultation. Woodside also requested Sea Dumping application process and timings. On 23 May 2022, Woodside attended an industry briefing hosted by DAWE. A further follow up discussion with DAWE occurred after the event where it was confirmed that they only required further information about the riser turret mooring (RTM) toppling case which is unrelated to this proposed activity. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).	Woodside will continue to engage with DCCEEW – Sea Dumping Branch regarding the application of the <i>Environment Protection (Sea Dumping) Act 1981</i> and to comply with requirements under the Act as per PS 1.1 of this EP. No additional measures or controls are required.
Department of Biodiversity, Conservation and Attractions (DBCA)		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with DBCA for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 6.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet was publicly available on the BHP website in May 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023. Consultation information provided to DBCA on 27 May 2022 based on their function, interest and activities. Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, North West Telegraph, Pilbara News, Midwest Times (15 February 2023) and the Geraldton Guardian (17 February 2023) advising of the proposed activities and requesting comments or feedback. Woodside has addressed and responded to DBCA over a 23-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 27 May 2022, Woodside emailed DBCA and provided the Stybarrow P&A and Decommissioning Environment Plans Fact Sheet (Appendix F, reference 1.5). On 2 June 2022, DBCA responded and advised it had no comments on proposed activities in relation to its responsibilities under the <i>Conservation and Land Management Act 1984</i> and <i>Biodiversity Conservation Act 2016</i>. On 27 July 2022, Woodside emailed DBCA and acknowledged its advice of no comments in relation to responsibilities under the <i>Conservation and Land Management Act 1984</i> and <i>Biodiversity Conservation Act 2016</i> based on the information provided. On 16 February 2023, Woodside emailed DBCA advising of the proposed activity (Appendix F, reference 2.15) and provided a Consultation Information Sheet. On 10 March 2023, Woodside emailed DBCA advising of the proposed activity (Appendix F, reference 3.15) and provided a Consultation Information Sheet. On 16 March 2023, DBCA responded noting it had provided feedback previously on decommissioning activities unrelated to this EP. DBCA had no specific feedback with respect to the proposed activities in this EP. On 1 June 2023, Woodside responded to DBCA in relation to the comments raised that are not relevant to this proposed activity. 		

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Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>DBCAs advised that it had previously provided feedback on proposed activities. No specific feedback was received with respect to the proposed activities.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p>	<p>The Environment Plan demonstrates that the EMBA is outside the boundaries of a proclaimed State Marine Park and identifies that there are no credible impacts to the values of any State Marine Parks as a result of the petroleum activity (Section 5.4).</p> <p>No additional measures or controls are required.</p>

Commonwealth and State Government Departments or Agencies – Industry

Department of Industry, Science and Resources (DISR) (formerly DISER)

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with DISR for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 6.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in May 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Consultation information provided to DISR on 27 May 2022 based on their function, interest and activities.
- Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, North West Telegraph, Pilbara News, Midwest Times (15 February 2023) and the Geraldton Guardian (17 February 2023) advising of the proposed activities and requesting comments or feedback.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided DISR with the opportunity to provide feedback over a 23-month period.

Summary of information provided and record of consultation:

- On 27 May 2022, Woodside emailed DISR and provided the Stybarrow P&A and Decommissioning Environment Plans Fact Sheet (Appendix F, reference 1.13).
- On 16 February 2023, Woodside emailed DISR advising of the proposed activity (Appendix F, reference 2.2) and provided a Consultation Information Sheet.
- On 10 March 2023, Woodside sent a reminder email to DISR advising of the proposed activity (Appendix F, reference 3.6) and provided a Consultation Information Sheet.
- On 4 May 2023, Woodside had a meeting with DISR to provide an update on the status of an unrelated EP and to provide a decommissioning overview of upcoming Woodside activities, including the activities proposed under this EP. No feedback was received from DISR.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside notes that no feedback was provided from DISR with respect to the proposed activities.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p>	<p>No additional measures or controls are required.</p>

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

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Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with DEMIRS for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 6.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in May 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Consultation information provided to DMIRS on 27 May 2022 based on their function, interest and activities.
- Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, North West Telegraph, Pilbara News, Midwest Times (15 February 2023) and the Geraldton Guardian (17 February 2023) advising of the proposed activities and requesting comments or feedback.
- Woodside has addressed and responded to DMIRS over a 23-month period.

Summary of information provided and record of consultation:

- On 27 May 2022, Woodside emailed DMIRS and provided the Stybarrow P&A and Decommissioning Environment Plans Fact Sheet (Appendix F, reference 1.6).
- On 22 June 2022, DMIRS responded by email and provided the following feedback:
 - DMIRS noted that proposed activities would be assessed under assessed under the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 and regulated by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).
 - DMIRS did not require further information at this stage.
 - DMIRS requested pre-start and cessation of activity notifications unrelated to the EP.
 - DMIRS provided advice on consultation in the event that an incident could potentially impact on any land or water under State jurisdiction.
- On 27 July 2022, Woodside responded with the following response:
 - Woodside noted DMIRS acknowledgement that the EP would be assessed by NOPSEMA
 - Woodside noted DMIRS required no further information
 - Woodside confirmed the EP would include information about the reporting of environmental incidents that could potentially impact on any land or water in State jurisdiction.
- On 16 February 2023, Woodside emailed DMIRS advising of the proposed activity (Appendix F, reference 2.2) and provided a Consultation Information Sheet.
- On 10 March 2023, Woodside sent a reminder email to DMIRS advising of the proposed activity (Appendix F, reference 3.6) and provided Consultation Information a Consultation Information Sheet.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>DMIRS responded advising it required no further information at this stage.</p> <p>DMIRS provided advice on consultation in the event that an incident could impact land or water under State jurisdiction.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>Woodside has addressed DMIRS's feedback confirming it would include information about the reporting of environmental incidents that could potentially impact on any land or water in State jurisdiction.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p>	<p>No additional measures or controls are required.</p>

Commonwealth Commercial fisheries and representative bodies

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Western Deepwater Trawl Fishery		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Western Deepwater Trawl Fishery for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 6.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in May 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023. • Consultation information provided to Western Deepwater Trawl Fishery on 27 May 2022 based on their function, interest and activities. • Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, North West Telegraph, Pilbara News, Midwest Times (15 February 2023) and the Geraldton Guardian (17 February 2023) advising of the proposed activities and requesting comments or feedback. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided Western Deepwater Trawl Fishery with the opportunity to provide feedback over a 23-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 27 May 2022, Woodside emailed Western Deepwater Trawl Fishery and provided the Stybarrow P&A and Decommissioning Environment Plans Fact Sheet (Appendix F, reference 1.17). • On 17 February 2023, Woodside emailed Western Deepwater Trawl Fishery advising of the proposed activity (Appendix F, reference 2.30) and provided a Consultation Information Sheet. • On 10 March 2023, Woodside sent a reminder email to Western Deepwater Trawl Fishery advising of the proposed activity (Appendix F, reference 3.26) and provided a Consultation Information Sheet. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Environment Plan Controls
No feedback, objections or claims received despite follow up.	<p>Woodside has provided consultation information to AFMA, DAFF – Fisheries, CFA, ASBTIA, Tuna Australia and individual relevant licence holders.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 5.6.2 of this EP.</p> <p>Woodside will notify relevant State and Commonwealth fisheries of infrastructure remaining <i>in situ</i> (Western Deepwater Trawl Fishery) as per PS 1.3 of this EP.</p> <p>No additional measures or controls are required.</p>
Commonwealth Fisheries Association (CFA)		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with CFA for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 6.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in May 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023. • Consultation information provided to Western Deepwater Trawl Fishery on 27 May 2022 based on their function, interest and activities. • Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, North West Telegraph, Pilbara News, Midwest Times (15 February 2023) and the Geraldton Guardian (17 February 2023) advising of the proposed activities and requesting comments or feedback. 		
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- Woodside has sent a follow up email seeking feedback on the proposed activities.
 - Woodside has provided Western Deepwater Trawl Fishery with the opportunity to provide feedback over a 23-month period.
- Summary of information provided and record of consultation:**
- On 27 May 2022, Woodside emailed CFA and provided the Stybarrow P&A and Decommissioning Environment Plans Fact Sheet (Appendix F, reference 1.19).
 - On 16 February 2023, Woodside emailed the CFA advising of the proposed activity (Appendix F, reference 2.9) and provided a Consultation Information Sheet.
 - On 10 March 2023, Woodside sent a reminder email to CFA advising of the proposed activity (Appendix F, reference 3.10) and provided a Consultation Information Sheet.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	<p>Woodside has provided consultation information to AFMA, DAFF – Fisheries, CFA, ASBTIA, Tuna Australia and individual relevant licence holders.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 5.6.2 of this EP.</p> <p>Woodside will notify relevant State and Commonwealth fisheries of infrastructure remaining <i>in situ</i> (Western Deepwater Trawl Fishery) as per PS 1.3 of this EP.</p> <p>No additional measures or controls are required.</p>

Recreational marine users and representative bodies

Exmouth Recreational Marine Users

- Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Exmouth Recreational Marine Users for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 6.4 of the EP. Specifically:
- Consultation Information Sheet was publicly available on the BHP website in May 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
 - Consultation information provided to Exmouth Recreational Marine Users on 27 May 2022 based on their function, interest and activities.
 - Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, North West Telegraph, Pilbara News, Midwest Times (15 February 2023) and the Geraldton Guardian (17 February 2023) advising of the proposed activities and requesting comments or feedback.
 - Woodside has addressed and responded to Exmouth Recreational Marine Users over a 23-month period.
- Summary of information provided and record of consultation:**
- On 27 May 2022, Woodside emailed Exmouth Recreational Marine Users advising of the proposed activity (Appendix F, reference 1.9 and 1.23) and provided a Consultation Information Sheet.
 - On 31 May 2022, an Exmouth Recreational Marine User responded requesting that activity unrelated to this EP did not commence until after GAMEX tournament was conducted in March each year.

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<ul style="list-style-type: none"> On 28 July 2022, Woodside responded to advise that there were no plans to be in the field in March 2023. Woodside committed to maintaining contact as planning progressed for activities unrelated to this EP. On 16 February 2023, Woodside emailed Exmouth Recreational Marine Users advising of the proposed activity (Appendix F, reference 2.3) and provided a Consultation Information Sheet. On 10 March 2023, Woodside sent a reminder email to Exmouth Recreational Marine Users advising of the proposed activity (Appendix F, reference 3.25) and provided a Consultation Information Sheet. 		
Summary of Feedback, Objection or Claim	Summary of Feedback, Objection or Claim	Inclusion in Environment Plan
No feedback received from Exmouth Recreational Marine Users in relation to this EP.	<p>Woodside has provided consultation information to Recfishwest, Marine Tourism Association of WA, WA Game Fishing Association and individual recreational marine users.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p>	No additional measures or controls are required.
Recfishwest		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Recfishwest for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 6.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet was publicly available on the BHP website in May 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023. Consultation information provided to Recfishwest on 27 May 2022 based on their function, interest and activities. Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, North West Telegraph, Pilbara News, Midwest Times (15 February 2023) and the Geraldton Guardian (17 February 2023) advising of the proposed activities and requesting comments or feedback. Woodside has addressed and responded to Recfishwest over a 23-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 8 April 2022, Recfishwest responded to correspondence from Woodside in relation to this EP and provided the following information: <ul style="list-style-type: none"> Recfishwest is the peak body representing the interests of the recreational fishers in Western Australia. Recfishwest are a not-for-profit community-based organisation that endeavours to ensure high quality recreational fishing experiences are maintained and enjoyed for all in the community. Recfishwest places the highest priority on preserving the marine environment and safeguarding the future of our recreational fishing experiences, which are reliant on healthy habitats and abundant fish stocks. Recfishwest has explored new opportunities in the reefing space, while building its capacity and knowledge about how marine infrastructure can benefit the environment. Recfishwest is aware that much of the oil and gas infrastructure between Exmouth and Port Hedland is nearing the end of operations life and scheduled for decommissioning. Recfishwest strongly believes that well considered, responsible decommissioning projects can provide positive social, environmental, and economic outcomes. Recfishwest supports retaining marine infrastructure for environmental benefit if five reef principles are met. The marine structures must: <ul style="list-style-type: none"> Be defined by a distinct purpose which is focused on the best interests of the community Be environmentally safe and beneficial – in particular ensuring all potential contaminants are removed from structures. If they cannot be removed Recfishwest will not support structures being left in the water. Be informed by science, where the design and configuration provide greatest benefit to the marine environment 		

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- Contribute to a body of knowledge to provide continuous improvement and effectiveness of reefing practices
- Contribute to a long-term commitment to build capacity in the area of reefing

Recfishwest also advised it:

- did not object to the steps being taken by Woodside to address concerns that the recreational fishing sector might have.
 - was supportive of abandoned asset augmentation if it was environmentally safe to do so as it would increase fishing opportunities.
 - would like to be consulted on any upcoming offshore decommissioning activities and that all charts are updated so recreational fishers can locate the structure.
 - looks forward to further updates on this activity as it does impact recreational marine users.
 - On 11 April 2022, Woodside responded noting Recfishwest's points as follows:
 - Provision of information about Recfishwest and its representative activities in the recreational fishing sector, as well as comments on the economic and social importance to the State and regional communities.
 - Feedback that the recreational fishing community currently fishes the Stybarrow area and structures.
 - Comments on opportunities for artificial reefs or alternative decommissioning strategies that can be achieved from the decommissioning of oil and gas infrastructure, in turn creating healthy and resilient marine ecosystems through the creation and retention of key marine habitats.
 - Position on expectations for supporting reefing opportunities.
 - Lack of objection with the steps being taken to address concerns that the recreational fishing sector might have with respect to environmental safety and benefits.
 - Objection to any infrastructure proposed to be left in the water where contaminants cannot be removed.
 - Preference for structure augmentation. Woodside approaches decommissioning on a case-by-case basis
 - Request to receive further updates on the progress on these decommissioning activities, so constituents are aware of planned activities that are due to take place in the area.
 - On 11 April 2022, Woodside further responded to Recfishwest to advise that the Stybarrow infrastructure is marked on nautical charts.
 - On 27 May 2022, Woodside emailed Recfishwest and provided the Stybarrow P&A and Decommissioning Environment Plans Fact Sheet (Appendix F, reference 1.14).
 - On 17 June 2022, Recfishwest responded to Woodside and provided the following information:
 - Recfishwest is the peak body representing the interests of the estimated 740,000 recreational fishers in Western Australia. Recfishwest are a not-for-profit community-based organisation that endeavours to ensure high quality recreational fishing experiences are maintained and enjoyed for all in the community.
 - Recreational fishing is an integral part of the Pilbara lifestyle. The region's unique coastline includes some of Australia's prime fishing locations and includes an array of offshore islands, coral reef systems and offshore habitats, providing ample recreational fishing opportunities which hold a plethora of high valued species making it a key driver of visitation to the region, attracting visitors from around the state and country.
 - Recfishwest places the highest priority on preserving the marine environment and safeguarding the future of our recreational fishing experiences, which are reliant on healthy habitats and abundant fish stocks. While the planned activities stated in these environmental plans are located a fair distance from shore, the field is still actively fished by members of the recreational fishing community.
- Recfishwest provided further feedback as follows:
- Noted it was promising to see that some structures will be left *in situ*, as the assessment concluded that leaving these items in the water was a better outcome for the environment, as it will avoid the damage caused by their removal and these structures not containing any plastics or known marine contaminants.
 - In review of the work planned in the environmental plans for stakeholder consultation, Recfishwest does not object to the steps taken to address concerns that the recreational fishing sector might have.
 - Additionally, Recfishwest would like to be consulted on any upcoming offshore exploration activities, irrespective of the distance from shore and that all charts are updated, so recreational fishers can locate the areas.

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- On 27 July 2022, Woodside responded to Recfishwest acknowledging Recfishwest's advocacy role on behalf of recreational fishers in Western Australia. Woodside also:
 - acknowledged the social importance to regional communities of recreational fishing.
 - acknowledged the potential presence of recreational fishers at the activity location.
 - noted feedback on Woodside's assessment for leaving some structures *in situ*.
 - noted that Recfishwest does not object to planned activities.
 - advised it will continue to keep Recfishwest informed of planned activities and that nautical charts are maintained.
- On 16 February 2023, Woodside emailed Recfishwest advising of the proposed activity (Appendix F, reference 2.2) and a provided a Consultation Information Sheet.
- On 2 March 2023, Recfishwest responded by email acknowledging Woodside's update on the proposed decommissioning of the Stybarrow field.
 - Recfishwest referred to advice previously provided on the importance of recreational fishing to the Gascoyne region and that area around the field are actively fished by the recreational fishing community.
 - Recfishwest noted the proposed activities timing, and that existing and new exclusion/cautionary zones will be in place during this period for activities proposed under separate EPs for decommissioning of the Stybarrow field.
 - Recfishwest advised it had reviewed the consultation information sheets and had no concerns regarding the proposed activities.
 - Recfishwest requested to be kept informed as activities progress so that it may advise recreational fishers as required.
- On 10 March 2023, Woodside sent a follow up email (Appendix F, reference 3.6).
- On 24 March 2023, Woodside emailed Recfishwest noting its feedback on the activity update and for previous consultation activities. Woodside advised it would keep Recfishwest advised as activities are progressed for applicable EPs.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>Recfishwest provided feedback, including:</p> <ul style="list-style-type: none"> • Noted it was promising to see that some structures will be left <i>in situ</i>. • It would object to any infrastructure proposed to be left in the water where contaminants cannot be removed. • Requested to be consulted on future offshore decommissioning activities and that the location of infrastructure left <i>in situ</i> will be maintained on nautical charts. • Requested to be kept informed as activities progress so that it may advise recreational fishers as required. 	<p>Woodside has responded to Recfishwest's feedback and has confirmed it will keep Recfishwest updated on project updates and addressed comments with respect to the decommissioning of the Stybarrow field.</p> <p>Woodside has provided consultation information to Recfishwest, Marine Tourism WA, WA Game Fishing Association and individual recreational marine users.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. 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 10.3.5).</p>	<p>Woodside has consulted Recfishwest in the course of preparing this EP. Woodside has assessed the claims or objections raised by Recfishwest. No additional measures or controls have been put in place.</p> <p>The EP demonstrates that decommissioning of the infrastructure <i>in situ</i> results in equal or better environmental outcomes than full removal (Section 3). The equipment to remain <i>in situ</i> is composed of steel and some protective paint coatings. None of the equipment contained production fluids, hence there are no residual contaminants (e.g., hydrocarbons, naturally occurring radioactive material (NORM), heavy metal contaminants) originating from the reservoir (Section 4.6). Degradation of equipment decommissioned <i>in situ</i> will not result in potential impacts greater than localised</p>

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		<p>reduction in sediment quality and associated fauna within the immediate vicinity of infrastructure (Section 8.2).</p> <p>Woodside considers the measures and controls described within this EP address the potential impact from the proposed activities on Recfishwest's functions, interests or activities.</p>
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Marine Tourism WA

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Marine Tourism WA for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 6.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in May 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Consultation information provided to Marine Tourism WA on 27 May 2022 based on their function, interest and activities.
- Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, North West Telegraph, Pilbara News, Midwest Times (15 February 2023) and the Geraldton Guardian (17 February 2023) advising of the proposed activities and requesting comments or feedback.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Marine Tourism WA with the opportunity to provide feedback over a 23-month period.

Summary of information provided and record of consultation:

- On 27 May 2022, Woodside emailed Marine Tourism WA and provided the Stybarrow P&A and Decommissioning Environment Plans Fact Sheet (Appendix F, reference 1.15)
- On 16 February 2023, Woodside emailed Marine Tourism WA advising of the proposed activity (Appendix F, reference 2.2) and provided a Consultation Information Sheet.
- On 10 March 2023, Woodside sent a reminder email to Marine Tourism WA advising of the proposed activity (Appendix F, reference 3.6) and provided a Consultation Information Sheet.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	<p>Woodside has provided consultation information to Recfishwest, Marine Tourism WA, WA Game Fishing Association and individual recreational marine users.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p>	No additional measures or controls are required.

WA Game Fishing Association

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the WA Game Fishing Association for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 6.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in May 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Consultation information provided to WA Game Fishing Association on 27 May 2022 based on their function, interest and activities.

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- Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, North West Telegraph, Pilbara News, Midwest Times (15 February 2023) and the Geraldton Guardian (17 February 2023) advising of the proposed activities and requesting comments or feedback.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided WA Game Fishing Association with the opportunity to provide feedback over a 23-month period.

Summary of information provided and record of consultation:

- On 27 May 2022, Woodside emailed WA Game Fishing and provided the Stybarrow P&A and Decommissioning Environment Plans Fact Sheet (Appendix F, reference 1.24).
- On 16 February 2023, Woodside emailed WA Game Fishing Association advising of the proposed activity (Appendix F, reference 2.2) and provided a Consultation Information Sheet.
- On 10 March 2023, Woodside sent a reminder email to WA Game Fishing Association advising of the proposed activity (Appendix F, reference 3.6) and provided a Consultation Information Sheet.

Summary of Feedback, Objection or Claim	Summary of Feedback, Objection or Claim	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside has provided consultation information to Recfishwest, Marine Tourism WA, WA Game Fishing Association and individual recreational marine users. Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).	No additional measures or controls are required.

Peak Industry Representative bodies

Australian Energy Producers (AEP) (Formerly APPEA)

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with AEP for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 6.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in May 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Consultation information provided to APPEA on 27 May 2022 based on their function, interest and activities.
- Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, North West Telegraph, Pilbara News, Midwest Times (15 February 2023) and the Geraldton Guardian (17 February 2023) advising of the proposed activities and requesting comments or feedback.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided APPEA with the opportunity to provide feedback over a 23-month period.

Summary of information provided and record of consultation:

- On 27 May 2022, Woodside emailed APPEA and provided the Stybarrow P&A and Decommissioning Environment Plans Fact Sheet (Appendix F, reference 1.16).
- On 17 February 2023, Woodside emailed APPEA advising of the proposed activity (Appendix F, reference 2.2) and provided a Consultation Information Sheet.
- On 10 March 2023, Woodside sent a reminder email to APPEA advising of the proposed activity (Appendix F, reference 3.6) and provided a Consultation Information Sheet.

Summary of Feedback, Objection or Claim	Summary of Feedback, Objection or Claim	Inclusion in Environment Plan

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No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).	No additional measures or controls are required.
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Traditional Custodians and nominated representative corporations

Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC)
 NTGAC is established under the Native Title Act 1993 by the Baiyungu people to represent the Baiyungu people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with NTGAC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 6.4 of the EP. Specifically:

Sufficient Information:

- Consultation Information Sheet was publicly available on the BHP website May 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Woodside sought direction on NTGAC’s preferred method of consultation. This resulted in two face-to-face meetings being coordinated at the location of NTGAC’s choosing, with NTGAC nominated representatives. These meetings included information that was readily accessible and appropriate.
- Provided Consultation Information Sheet and Consultation Summary Sheets to NTGAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity in a digestible, plain English format.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls to manage potential impacts to As Low As Reasonably Practicable (ALARP) and acceptable levels.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Asked for the consultation and information sheets to be distributed to members and individuals.
- Provided NOPSEMA’s Brochure “Consultation on offshore petroleum environment plans” and Guideline “Guideline: Consultation in the course of preparing an environment plan”.
- Provided response to questions asked about the activity through consultation. Through these questions, NTGAC have displayed an understanding of the activities under this Environment Plan.
- Advised that NTGAC can request that particular information provided in the consultation not be published (to align with 25(4)).
- As per a request from NTGAC, Woodside funded Yamatji Marlpa Aboriginal Corporation (YMAC’s) environmental scientist to attend two face-to-face meetings to support consultation and funded a YMAC lawyer to attend the August meeting with NTGAC. This assisted in ensuring any technical information was provided in a way which allowed NTGAC to make an informed assessment of the possible consequences of the activities on the functions, interests or activities.

Reasonable Period:

- Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, North West Telegraph, Pilbara News, Midwest Times (15 February 2023) and the Geraldton Guardian (17 February 2023) advising of the proposed activities and requesting comments or feedback.
- Consultation information provided to NTGAC on 21 February 2023 based on their functions, interests, and activities.
- Woodside commenced consultation with NTGAC in February 2023. Woodside has addressed and responded to NTGAC over 14 months, demonstrating a “reasonable period” of consultation.
- Woodside asked NTGAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

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Woodside has provided a reasonable opportunity for input since February 2023 and a genuine two-way dialogue has occurred via meetings and written exchanges to further understand the environment in which the activity will take place. NTGAC has engaged with the detail of the activity asking related questions. The details of these engagements are described in the consultation summary below.

Woodside engages in ongoing consultation, beyond that required by regulation 25, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5 of the EP).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on NTGAC functions, interests, or activities.

Woodside does not agree with NTGAC's assertion that it has not yet been adequately consulted on the activity. Woodside has assessed the claims and feedback raised by NTGAC, as detailed later in this section alongside Woodside's response to the claims. Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on NTGAC's functions, interests, or activities.

Summary of information provided and record of consultation:

- On 6 January 2023, Woodside phoned NTGAC via the representative body Yamatji Marlpa Aboriginal Corporation (YMAC) for the purpose of introduction and to explain that Woodside will be sending information concerning EPs.
- **(1)** On 27 January 2023 Woodside phoned and emailed NTGAC/YMAC to follow up on the information provided. Woodside requested if NTGAC required anything further ahead of a planned meeting with Woodside on 16 February 2023.
- Between 1 and 13 February 2023, Woodside and YMAC had a series of phone conversations and emails confirming a meeting with the NTGAC Board on 16 February 2023.
- **(1)** On 1 February 2023, NTGAC/YMAC phoned Woodside to confirm the planned meeting for 16 February 2023. It was arranged to hold a subsequent phone discussion between key representatives on 10 February to discuss scope for the consultation meeting. Woodside said that it is anticipating feedback from the group on the proposed activity at this consultation meeting and asked for any specific families or individuals that Woodside should be engaging with to be invited. NTGAC/YMAC responded that consultation with NTGAC as the representative body is appropriate.
- On 10 February 2023, Woodside phoned NTGAC and described the proposed scope of the consultation meeting planned for 16 February.
- **(1)** On 16 February 2023, Woodside presented to a meeting of the NTGAC/YMAC Board:
 - Woodside described the EP framework, referring to the Offshore Petroleum and Greenhouse Gas Storage Act (Environment) Regulations, NOPSEMA's role as regulator and general contents of EPs.
 - Woodside encouraged NTGAC to raise anything which they feel is missing in the information provided during the meeting.
 - Woodside displayed a map of activities open for feedback to be discussed in the meeting and provided a list of other upcoming activities which will be open for consultation in 2023.
 - Woodside described the proposed activity, its timing and purpose, Woodside explained that the fields have finished producing oil and processing facilities have departed.
 - NTGAC asked Woodside to explain the Stybarrow and Griffin decommissioning activities by points of difference from the Nganhurra RTM decommissioning activities.
 - Woodside explained that Griffin is in shallower water than Nganhurra RTM, and the Griffin RTM is already on the seabed, and a section of pipeline is also being removed.
 - Woodside described planned and unplanned environmental risks and impacts in accordance with the tables provided in the Information Sheets for the activities and emphasised that unplanned risks were not expected to occur and were unlikely. It was noted that at a high level the categories of risks and impacts were similar to another activity already discussed in the meeting.
 - Woodside described the worst case EMBA for the activity.
 - **(2 & 3)** YMAC/NTGAC asked about risk to marine parks and whale sharks.
 - Woodside replied that vessels move slowly to minimise impacts to marine fauna, and that nothing is planned to go into marine parks or Exmouth Gulf.
 - **(2)** NTGAC asked whether other vessels could interfere with the activity.
 - Woodside explained that a 500m exclusion zone will be implemented to try to avoid this.
 - **(3)** NTGAC asked whether the activities can be done outside whale shark season.

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- Woodside explained that it isn't planned and noted that vessels move slowly.
- **(2)** YMAC/NTGAC asked whether Woodside have had any incidents with similar activities before.
 - Woodside responded that we have completed decommissioning of the Balnaves field in the past with no material incidents.
- **(4)** YMAC made mention of a request that had been made for an environmental scientist to support consultation
 - Woodside replied they would respond to a formal request.
- Woodside explained how spill risk is assessed and showed the environment that may be affected (EMBA) for each activity.
- **(2)** YMAC/NTGAC asked for more detail on how the potential loss of containment volumes were identified.
 - Woodside replied that it is either the largest fuel tank from a vessel, or what could come out of the wells where relevant. EMBA for each activity was shown again and scenarios reiterated.
- **(2)** YMAC/NTGAC asked for clarification on how crude oil could be released from Stybarrow wells.
 - Woodside replied that multiple barriers are in place between reservoir hydrocarbons and the environment, they would all have to fail for an escape. It was noted that some well do not flow anymore due to low pressure.
- Woodside noted this concluded the Decommissioning section of the meeting and called for any further questions or feedback. None were received.
- Woodside stated that there is significant work and consultation coming up, and it hope to spend more time with NTGAC to understand expectations and desire of how Woodside can work with NTGAC.
- YMAC expressed that they are being inundated with requests for consultation from oil and gas operators and are working internally on processes and priorities for consultation.
- Woodside welcomed the transparency and discussion on capacity.
- NTGAC expressed that consulting on these types of activities is not viewed as wasting time, but consultation which gives nothing back to the community is not a priority. They are interested in partnership programs and on-country engagements.
- Woodside stated that while all the big companies will have deadlines and need to get feedback to meet legal requirements, Woodside desires it to be a jointly held process and that if NTGAC desires any support or assistance to please request it.
- Woodside provided personal contact details for further feedback.
- Woodside provided NOPSEMA contact details should NTGAC desire to provide feedback directly to the regulator.
- On 21 February 2023, Woodside emailed NTGAC via the representative body YMAC advising of the proposed activity (Appendix F, reference 2.24) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside's website) as well as a summary overview fact sheet.
- On 21 February 2023, NTGAC/YMAC emailed Woodside to seek clarification of the attendee names at the 16 February 2023 Board meeting.
- On 21 February 2023, Woodside emailed NTGAC/YMAC the attendee names at the 16 February 2023 Board meeting and provided a copy of the presentation pack. Woodside followed up on request for any further feedback on the proposed activity.
- **(4)** On 22 February 2023, NTGAC/YMAC emailed Woodside to thank Woodside for sending the relevant information and noted that YMAC would liaise with Woodside on funding an environmental scientist.
- **(4)** Between 22-23 February 2023, NTGAC/YMAC and Woodside exchanged emails about additional resourcing so NTGAC could obtain independent expertise on a different activity but not for the proposed activities in this EP.
- On 22 March 2023, Woodside followed up by phone with NTGAC/YMAC on any feedback on the proposed activities.
- On 24 March 2023, NTGAC (via YMAC) responded that it would let Woodside know as soon as the Board had the opportunity to review and provide comments.
- On 24 March 2023, Woodside emailed NTGAC (via YMAC) to enquire whether Woodside could assist with anything.
- On 28 March 2023, YMAC followed up with Woodside on a Woodside action arising from the 16 February meeting to supply photos and diagrams in relation to the different activity.

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- On 31 March 2023, Woodside followed up with the relevant photos and diagrams, noting contact details and welcoming any further feedback. Woodside thanked NTGAC for their work to date and requested that NTGAC reach out for any assistance.
- On 1 June 2023, Woodside emailed NTGAC/YMAC to ask if any further assistance or information was required on Woodside matters.
- On 7 June 2023, NTGAC/YMAC emailed Woodside to apologise for delayed response and to advise that the Board are currently busy, the request for information will be followed up.
- On 19 June 2023, Woodside emailed NTGAC/YMAC to inform that they were sending information on an unrelated EP and to ask whether NTGAC required any consultations on any matters. Woodside also asked NTGAC if they required any assistance in relation to consultation.
- On 19 June 2023, NTGAC/YMAC emailed Woodside with instructions from NTGAC Directors that they would like to undertake a consultation workshop with Woodside.
- On 19 June 2023, Woodside emailed NTGAC/YMAC to request a one-day meeting at a time and locations suitable to the Board.
- On 20 June 2023, Woodside emailed NTGA/YMAC to confirm information of an unrelated EP and to agree to a funding request and confirm awaiting meeting details.
- On 20 June 2023, NTGAC/YMAC emailed Woodside to acknowledge they will look at the Board's availability for a one day meeting.
- On 21 June 2023, NTGAC/YMAC emailed Woodside to acknowledge they will look at booking a full day's workshop and that they would like all EP activities to be covered.
- On 21 June 2023, Woodside emailed NTGAC/YMAC noting workshop and agreeing to assist with planning arrangements.
- On 30 June 2023, NTGAC/YMAC emailed Woodside with a date and proposed budget for a full day meeting with NTGAC Board on 15 August 2023.
- On 5 July 2023, Woodside emailed NTGAC/YMAC to confirm the meeting date and offer assistance with meeting arrangements.
- **(5)** On 17 July 2023, NTGAC/YMAC emailed Woodside attaching a draft framework for consultation with PBCs. YMAC advised NTGAC is not in a position to provide comments on consultation at this time. NTGAC would like to have a strategic planning workshop to develop benefits Woodside can provide under the consultation agreement and to discuss implementation of the framework.
- On 19 July 2023, Woodside emailed NTGAC NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that NTGAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 24 July 2023, Woodside emailed NTGAC to request a pre meeting to finalise the agenda for 15 August workshop with NTGAC board. The email set out suggested topics to support outcomes to address NTGACS concerns and aspirations and address Woodside's needs in respect of how best to work with NTGAC.
- **(4 & 5)** On 25 July 2023, Woodside emailed NTGAC/YMAC Woodside's planned Program of Ongoing Engagement with Traditional Custodians.
- On 28 July 2023, NTGAC/YMAC confirmed availability for a pre meeting.
- On 31 July 2023, Woodside emailed NTGAC/YMAC to accept a pre meeting date.
- On 3 August 2023, Woodside emailed NTGAC/YMAC about an unrelated activity and thanked NTGAC/YMAC for the pre meeting held on 2 August and confirmed the meeting with NTGAC on 15 August 2023. Woodside also emailed NTGAC NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that NTGAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 9 August 2023, Woodside emailed NTGAC/YMAC requesting clarity around the meeting scheduled for 15 August 2023.
- On 11 August 2023, Woodside emailed NTGAC/YMAC confirming meeting and Woodside representatives for 15 August 2023.
- On 14 August 2023, NTGAC/YMAC emailed Woodside acknowledging the meeting to be held 15 August 2023.
- **(1)** On 15 August 2023, Woodside presented to the NTGAC about several EPs including this EP. At the meeting Woodside:
 - Described the Environment Plan framework, referring to the Offshore Petroleum and Greenhouse Gas Storage Act (Environment) Regulations, NOPSEMA's role as regulator and general contents of Environment Plans.
 - Displayed a map of activities open for feedback to be discussed in the meeting and provided a list of other upcoming activities which will be open for consultation in 2023.
 - Provided an update and overview of the decommissioning activities.

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- Described the types of vessels involved.
- Described planned and unplanned environmental risks and impacts in accordance with tables provided in the Information Sheets for the activities, emphasising that unplanned risks are not expected to occur and are unlikely.
- Displayed and spoke to the EMBA for the proposed activity, and the individual worst-case loss of containment scenarios identified, noting that they are all diesel fuel releases which would only be caused by vessel collisions.
- Stated that Woodside wanted to understand how the functions, activities, or interests of NTGAC and the people it represents may be impacted by any of those activities.
- Specifically asked the following:
 - How could these activities impact your cultural values, interests, and activities – does protecting the environment do enough to protect your cultural values?
 - What are your concerns about the proposed activities and what do you think we should do about them?
 - Is there anything you would like included in the EPs before submission?
 - Is there anyone else Woodside should consult with about the activities?
- Advised that Woodside will continue to take feedback from NTGAC for the life of the EP.
- Provided personal contact details for further feedback. Woodside provided NOPSEMA contact details, should NTGAC desire to provide feedback directly to the regulator.
- At the 15 August meeting NTGAC asked the following questions and gave the following feedback:
- **(3)** YMAC/NTGAC asked about whale sightings and Woodside's response to sightings. Woodside responded that the response to whale sightings depended on the specific activity and that controls like Marine Mammal Observers were implemented for particular activities.
- NTGAC stated their consultation expectations (two-way dialogue preferred over one-way presentations and requested that consultation meetings cover whole projects or phases rather than single EP activities which was too time consuming).
- **(7)** NTGAC discussed social investment ideas and how Woodside could support the local community. Woodside supported providing help, in various ways, as needed by the community.
- **(4)** NTGAC requested that an independent environment assessment be funded. Woodside confirmed whether this meant a non-Woodside employee. NTGAC agreed.
- **(6)** A proposed framework for consultation was discussed, involving Woodside funding General Project Reports to be written by an independent suitably qualified and experienced consultant, to be provided to NTGAC initially and then to Woodside. The General Project Reports outlined the nature of the activities for each phase of the project and the risks associated with each of the relevant activities.
- NTGAC requested that a table of EPs be submitted by December with a timeline.
- **(5)** NTGAC stated that it did not consider that they had been consulted on a range of Woodside EPs, including for this proposed activity.
- On 30 August 2023, Woodside emailed NGTAC/YMAC, confirming outcomes of the meeting, including:
 - **(6)** YMAC to provide a first draft of a consultation agreement.
 - **(6)** YMAC to prepare the first draft of a general report.
 - Woodside to provide a list of upcoming activities.
 - **(7)** Agreed to continue discussions relating to key community focus areas highlighted by NTGAC.
 - **(5)** Feedback from NTGAC on the appropriateness of the information given by Woodside (too technical) to enable NTGAC to provide feedback.
 - **(5)** Responded to NTGAC's claim that consultation has not begun by stating that in their view consultation has begun and is ongoing.
- On 6 September 2023, Woodside emailed NTGAC/YMAC with responses to queries about another activity unrelated to this EP, that were raised in the 15 August 2023 meeting.
- On 6 September 2023, NTGAC/YMAC emailed Woodside acknowledging information and noting they would pass over to their environmental scientist, as was stated as part of their proposed framework for consultation on 15 August 2023 meeting.

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- **(5)** On 14 September 2023, Woodside emailed NTGAC advising of the planned start date for the activity, as well as a list of all other activities as requested by NTGAC at the 15 August 2023 meeting. Woodside also once again requested if NTGAC is aware of any other people with whom Woodside should consult, and if there is any information NTGAC wishes to provide on cultural values and reiterating that Woodside will take feedback after the commencement of the activity as part of ongoing consultation. The Summary Information Sheet for this activity was attached.
- On 22 November 2023 Woodside emailed NTGAC/YMAC additional information about the decommissioning, specifically that it was necessary for Woodside to cut a H4 flowline resulting in the release of up to 14 m3 of crude oil and sand.
- On 14 December 2023, Woodside emailed YMAC attaching the Program of Ongoing Consultation and advised that Woodside wanted to progress negotiations on consultation frameworks with groups represented by YMAC (including NTGAC). Woodside proposed the protocol would include (among other things):
 - The procedures Woodside will follow when a submission requires consultation.
 - Initial and ongoing consultation in relation to activities.
 - Agreement as to how Woodside will provide NTGAC with the information NTGAC requires to make free, prior and informed decisions about Woodside's EPs.
 - Agreement as to how NTGAC will provide feedback and how that can best be represented in EPs.
 - An agreed schedule of rates for NTGAC's participation in consultation.
 - How the outputs of the consultations will be managed.
- On 28 February 2024, Woodside emailed NTGAC/YMAC with a letter setting out the draft terms of an agreement between NTGAC and Woodside, the agreement (among other things) included the following topics:
 - Sufficient Information
 - Reasonable Period.
 - Provision of Information
 - Objection or claims
 - Publications
 - Cost and termination.
- On 29 February 2024, NTGAC/YMAC emailed Woodside acknowledging receipt of the information.

Woodside will continue to pursue an ongoing two-way relationship with NTGAC under the Proposed Program of Ongoing Engagement with Traditional Custodians.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) On 1 February 2023, in response to Woodside's question as to whether there are specific families or individual with whom Woodside should be engaging, NTGAC advised via a phone call that they are the appropriate body to consult with.</p> <p>(2) During face-to-face engagement in February and August, NTGAC requested further information on topics related to decommissioning activities, including this</p>	<p>(1) Woodside accepts NTGAC's advice that they are the appropriate body to consult with.</p> <p>(2) Woodside responded to NTGAC's requests for further information during face-to-face engagements and in writing, and no further information was requested on these topics.</p> <p>(3) Woodside noted NTGAC's interest in whales and whale sharks.</p>	<p>(1) Not required.</p> <p>(2) Existing controls considered sufficient, as described in Section 8.</p> <p>(3) Woodside updated Section 5.6.1 to reflect NTGAC's interests and potential cultural values (including whales and whale sharks) and assessed potential impact on these , in Section 8.</p> <p>(4) Not required</p> <p>(5) Not required</p> <p>(6) & (7) Woodside is implementing a program to actively support Traditional</p>

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<p>activity which was responded to during the meeting:</p> <ul style="list-style-type: none"> • Potential for oil release • Vessel interference • Whale shark season • Experience with unexpected incidents • Waste disposal • Risk to marine parks • Whether any incidents have occurred during similar activities by Woodside • How loss of containment volumes were calculated • Whale sightings and response. • Marine parks and ballast water discharge. <p>(3) NTGAC have expressed a general interest in whales and whale sharks. Woodside discussed controls protecting whales and whale sharks from an ecological perspective during meetings in which they were raised, and no further feedback or comment was received on these topics.</p> <p>(4) NTGAC requested funding for YMAC's in-house environmental scientist.</p> <p>(5) NTGAC claimed that they have not been consulted about the activity to date, stating that they could not provide information on cultural values because the information provided has been too technical and that timeframes were not sufficient.</p> <p>(6) NTGAC is developing the first draft of a Consultation Agreement and General Report. The proposal for the General Report is that it would outline the nature of the activities for each phase of the project and the risks associated with each of the relevant activities. Woodside is awaiting</p>	<p>(4) Woodside funded YMAC's environmental scientist to attend two face-to-face meetings on 16 Feb 2023 and 15 Aug 2023 to support consultation. No feedback was received from this activity. Woodside has also offered to financially support provision of independent, third-party advice to NTGAC (19 April 23) which has not been taken up.</p> <p>(5) Woodside does not agree with NTGAC's claim that it has not yet been consulted on the activity, or that information provided has been too technical. Woodside met with NTGAC nominated representatives, at locations of NTGAC's choice, on 16 Feb and 15 Aug 2023, for multiple hour sessions where the activity was described face to face by Woodside project representatives, subject matter experts and First Nations relations advisers (see section 6.9.1 for approach). This included specifically developed "plain English" material developed by First Nations personnel in collaboration with technical experts, maps, pictures and a short video visually communicating the drilling process. During the meeting, NTGAC and YMAC representatives were encouraged to control the pace of the engagement and seek clarification. NTGAC and YMAC asked questions about the activity (see point 1) which indicates that material was engaged with. Woodside has also funded YMAC's in-house environmental scientist to support consultation. Woodside has addressed and responded to NTGAC over 10 months, demonstrating a "reasonable period" of consultation.</p> <p>(6) Separate from consultation under Regulation 25 for this activity, Woodside will establish a Consultation Agreement with NTGAC. The Consultation Agreement and General Report/s would be used to frame ongoing consultation to occur as part of Woodside's commitment to post Regulation 25 consultation ongoing engagement. Sufficient information to allow informed assessment has already been provided by other means, including summary sheets developed by Indigenous staff, multiple face to face meetings with appropriate material (pictures, maps, videos) and project attendance allowing opportunity to ask questions and seek further understanding, and agreement to fund NTGAC/YMAC environmental scientist who was also present at the meetings.</p> <p>(7) Woodside is continuing to work with NTGAC regarding social investment opportunities. Woodside has assessed that the Framework for Ongoing Consultation with NTGAC is an effective mechanism for exploring opportunities for alignment with NTGAC's Strategic Plan</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural</p>	<p>Custodians' capacity for ongoing engagement and consultation on environment plans. This is described further in the Program of Ongoing Engagement with Traditional Custodians, (Appendix E). This includes continued engagement regarding NTGAC's proposed Consultation Framework which will be applied to ongoing consultation, and potential support for their Strategic Plan.</p>
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<p>receipt of the initial draft of the General Report. (7) NTGAC is interested in exploring social investment opportunities with Woodside which may support NTGAC’s Strategic Plan.</p>	<p>values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5)</p>	
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Yinggarda Aboriginal Corporation (YAC)
YAC is established under the Native Title Act 1993 by the Yinggarda people to represent the Yinggarda people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with YAC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 6.4 of the EP. Specifically:

- Sufficient Information:**
- Consultation Information Sheet was publicly available on the BHP website May 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
 - Woodside sought direction on YAC’s preferred method of consultation. This resulted in face-to-face meetings being coordinated at the location of YAC’s choosing, with YAC nominated representatives. These meetings included information that was readily accessible and appropriate.
 - Provided Consultation Information Sheets and Consultation Summary Sheets to YAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity in a digestible, plain English format.
 - Articulated planned and unplanned environmental risks and impacts, with proposed controls.
 - Confirmed the purpose of consultation and set out in detail what was being sought through consultation.
 - Asked for the consultation and information sheets to be distributed to members and individuals.
 - Provided NOPSEMA’s Brochure “Consultation on offshore petroleum environment plans” and Guideline “Guideline: Consultation in the course of preparing an environment plan”.
 - Provided response to questions asked about the activity through consultation. Through these questions, YAC has displayed an understanding of the activities under this Environment Plan.
 - Advised that YAC could request the particular information provided in the consultation not be published (to align with 25(4)).

- Reasonable Period:**
- Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, North West Telegraph, Pilbara News, Midwest Times (15 February 2023) and the Geraldton Guardian (17 February 2023) advising of the proposed activities and requesting comments or feedback.
 - Consultation information provided to YAC on 22 February 2023 based on their functions, interests, and activities.
 - Woodside has addressed and responded to YAC over 14 months, demonstrating a “reasonable period” of consultation.

Woodside advised that YAC could request that particular information provided in the consultation not be published (to align with 25(4)).
Woodside asked YAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.
Woodside has provided a reasonable opportunity for input since February 2023 and a genuine two-way dialogue has occurred via meetings and written exchanges to further understand the environment in which the activity will take place. YAC has engaged with the detail of the activity asking related questions. The details of these engagements are described in the consultation summary below.

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Woodside engages in ongoing consultation, beyond that required by regulation 25, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see **Section 10.3.5** of the EP). Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on YAC's functions, interests or activities.

Summary of information provided and record of consultation:

- On 22 February 2023, Woodside emailed YAC via YMAC advising of the proposed activity (Appendix F Section 2.25) and provided a Consultation Information Sheet. Woodside noted it is seeking YAC's feedback as soon as possible on the proposed activity. Woodside stated that it would be grateful to meet with YAC at the earliest convenience at location of YAC's preference, providing budget and resources).
- On 24 February 2023, Woodside followed up with YAC/YMAC via phone call. YAC/YMAC advised it would send an email on 24 February to discuss an invitation for Woodside to meet with YAC.
- On 13 March 2023, Woodside met with YMAC legal representatives.
- On 20 March 2023, Woodside emailed YAC via YMAC to follow up the discussed invitation for a face-to-face meeting with its Board of Directors and offering a phone discussion if YAC had any questions on the activities in the meantime.
- On 23 March 2023, YAC via YMAC emailed Woodside and proposed a meeting on 3 May 2023 in Carnarvon and provided an estimate of its proposed costs. The invitation was accepted. and arrangements made for a pre-meeting with YMAC to coordinate details.
- On 23 March 2023, Woodside emailed YAC/YMAC confirming the meeting on 3 May 2023 stating that preference was to meet face to face to help develop relationships.
- On 23 March 2023, the YMAC lawyer emailed to arrange a pre-meet conversation on 31 April.
- On 24 March 2023, YMAC emailed Woodside proposing to meet on 31 March 2023 for a pre meeting discussion.
- On 24 March 2023, Woodside responded to YAC via YMAC confirming an online meeting on 31 March 2023
- On 27 March 2023, YMAC phoned Woodside to confirm the online meeting on 31 March 2023
- On 30 March 2023, YMAC emailed Woodside to cancel the pre meeting planned for 31 March 2023 with YMAC.
- On 30 March 2023, Woodside emailed YMAC acknowledging the cancellation of the meeting.
- On 27 April 2023, Woodside emailed the YMAC lawyer to confirm timing and location for the face-to-face meeting on 3 May 2023, but the email bounced back requesting correspondence be forwarded to an alternate contact in YMAC.
- On 27 April 2023, Woodside forwarded the email seeking to confirm time and location for the planned meeting to the alternate contact in YMAC.
- On 27 April 2023, YMAC confirmed by email and phone call that they no longer represented Yinggarda Aboriginal Corporation and that the meeting on 3 May 2023 had been cancelled. They informed Woodside that Gumala Aboriginal Corporation is now representing YAC and YMAC is in the process of hand over, including correspondence with Woodside.
- On 28 April 2023, Woodside attempted to call Gumala Aboriginal Corporation and left a voicemail to establish connection.
- On 27 April 2023, Woodside emailed YMAC thanking them for confirmation of YAC's representative.
- On 28 April 2023, Woodside attempted to call Gumala Aboriginal Corporation and left a voicemail to establish connection.
- On 28 April, Woodside emailed Gumala Aboriginal Corporation to establish contact and inform them of the prior context. Woodside stated that it is still interested in meeting with the YAC board if they were still interested.
- On 8 May 2023, Woodside phoned Gumala Aboriginal Corporation to follow up the email, explaining that it is seeking to consult Yinggarda on the proposed activity and noted that a planned meeting had been cancelled. Gumala Aboriginal Corporation indicated that the email address previously contacted was correct and indicated that it would call back. No return call was received.
- On 1 June 2023, Woodside phoned Gumala Aboriginal Corporation to speak to someone about consulting on EPs and explain that this matter has been the subject of various emails. Gumala reception said they would leave a message that Woodside called and have someone return their call.

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- On 15 June 2023, Gumala Aboriginal Corporation emailed Woodside proposing attendance at a YAC Board meeting on 6 July for one hour to discuss EPs not relevant to this matter.
- On 19 June 2023, Woodside emailed Gumala Aboriginal Corporation accepting the invitation to attend the YAC Board meeting, requesting a half day meeting with the YAC Board to allow YAC time to ask questions and have time to consider information.
- On 21 June 2023, Gumala Aboriginal Corporation emailed Woodside inviting attendance at a half day YAC Board meeting to discuss other EP matters.
- On 21 June 2023, Woodside emailed Gumala Aboriginal Corporation accepting the invite to attend the YAC Board meeting on 5 July, for a half day.
- On 5 July 2023, Woodside presented to the YAC Board about several EPs, including this EP. At the meeting Woodside:
 - Described the EP framework, referring to the Offshore Petroleum and Greenhouse Gas Storage Act (Environment) Regulations, NOPSEMA's role as regulator and general contents of EPs;
 - Displayed a map of activities open for feedback to be discussed in the meeting and provided a list of other upcoming activities which will be open for consultation in 2023;
 - Described the proposed activity.
 - The planned and unplanned environmental risks and impacts in accordance with tables provided in the Information Sheets for the activities, emphasising that unplanned risks are not expected to occur and are unlikely.
 - Displayed and spoke to the EMBA for each proposed activity, and the individual worst-case loss of containment scenarios identified;
 - Stated that Woodside wanted to understand how the functions, activities or interests of YAC and the people it represents may be impacted by any of those activities.
 - Woodside specifically asked the following:
 - How could these activities impact your cultural values, interests, and activities – does protecting the environment do enough to protect your cultural values?
 - What are your concerns about the proposed activities and what do you think we should do about them?
 - Is there anything you would like included in the EPs before submission?
 - Is there anyone else Woodside should consult with about the activities?
 - Advised that Woodside will continue to take feedback from YAC for the life of the EP;
 - Provided personal contact details for further feedback. Woodside provided NOPSEMA contact details, should YAC desire to provide feedback directly to the regulator.
 - At the 5 July 2023, meeting YAC asked the following questions and provided the following feedback:
 - Whether Woodside has undertaken environmental studies and whether these studies are ongoing.
 - What environmental monitoring happens after the EPs are approved.
 - Woodside responded that numerous environmental studies are undertaken, and they form part of the EPs, some information about ongoing commitments and research studies are available on Woodside's website. Woodside notes that they commit to ongoing consultation with YAC and will take feedback if any new information in relation to risks comes to light.
 - **(1)** YAC expressed sadness at the potential for environmental impact.
 - Response: Woodside explained that the potential impact from the unplanned activities is very low. For example, Woodside has been operating in the region for over 30 years and has not had a serious unplanned environmental event in that time. Importantly, if there is an unplanned event, the entire EMBA as shown on the maps will not be impacted. The area of the EMBA will be somewhere within the mapped area depending on factors such as wind, current and tide.
 - **(1)** YAC stated plants, animals and the environment are inexorably linked to their culture and asked: whether Woodside has undertaken environmental studies and whether these studies ongoing; and what environmental monitoring happens after the EPs are approved.
 - Response: Woodside has undertaken numerous environmental studies that form part of the EPs and has an ongoing commitment to environmental studies and research, some of which are set out on Woodside's website.

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- **(2)** Environmental monitoring is an ongoing activity, and the nature and timing of environmental monitoring depends on the nature, possible consequences, and likelihood of the environmental risks. Importantly, Woodside commits to ongoing consultation with YAC and will be able to take feedback if any new information in relation to risks comes to light.
- **(1) (2)** YAC expressed concern about potential impacts to potential impact patterns of whales, and potential collisions in relation to another EP discussed on the day. Woodside responded by explaining controls which would be in place to minimise impacts and risks to whales, and no further information was requested.
- On 17 July 2023, Woodside emailed YAC a letter summarising the 5 July meeting.
- On 19 July 2023, Woodside emailed YAC NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that YAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 19 July 2023, Woodside emailed YAC NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that YAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 19 July 2023, YAC emailed Woodside acknowledging receipt of Woodside's email of 19 July.
- On 26 July 2023, Woodside emailed MAC Woodside's planned Program of Ongoing Engagement with Traditional Custodians
- On 2 August 2023 YAC's new lawyer emailed Woodside after 6 months of consultation, to advise that they had been placed on retainer by YAC to advise on NOPSEMA matters.
- On 4 August 2023, YAC legal representative emailed Woodside confirming they have been retained by the YAC Board to deal with requests for consultation with them for NOPSEMA purposes. The email noted that YAC would like a consultation agreement for their consideration.
- **(4) (5)** On 10 August 2023, YAC lawyer emailed Woodside to provide instructions that the YAC Board requires more time for consultation on this activity and other activities and seeking a consultation agreement and alternative funding arrangements.
- On 11 August 2023, YAC (via Gumala) emailed Woodside confirming that BSA had been appointed to act as legal representative for YAC.
- On 11 August 2023, Woodside emailed YAC to confirm its commitment to ongoing engagement with YAC, work with YAC on a consultation agreement and commencing processes to enable new funding arrangements.
- On 14 August 2023, YAC emailed Woodside confirming arrangements for provision of resourcing.
- On 13 September 2023, Woodside emailed YAC advising of the planned start date for the activity, and once again requesting if YAC is aware of any other people with whom Woodside should consult, and if there is any information WGAC wish to provide on cultural values, and reiterating that Woodside will take feedback after the commencement of the activity as part of ongoing consultation. The Summary Information Sheet for this activity was attached.
- **(3)** On 13 September 2023, YAC via their law firm responded to Woodside advising that in the absence of a draft consultation agreement they were unable to respond in substance to the matters raised.
- **(3)** On 14 September 2023, Woodside emailed YAC via their law firm with a proposed consultation framework.
- **(3)** On 14 September 2023, YAC via their law firm confirmed receipt of the consultation framework and advised they would seek direction from the YAC Board.
- **(6)** On 13 October 2023, BSA emailed Woodside confirming they act for YAC on NOPSEMA matters. Among other things, they noted, they required an indemnity clause in the proposed framework agreement against any court action that arose from a claim against YAC in regard to the consultation they engaged on with Woodside EP's.
- **(6)** On 2 November 2023, Woodside emailed BSA noting they would not agree to the request to indemnify YAC against any court proceedings as a result of consultation they engage in with Woodside on EP's.
- **(6)** On 2 November 2023, BSA emailed Woodside requesting more detail about Woodside not supporting the indemnity request.
- **(6)** On 18 November 2023, Woodside emailed BSA with further information about why they will not indemnify YAC as requested in the 13 October 2023 email. Woodside explained that it could harm genuine engagement, may promote behaviors in others who may become aware of the indemnity by Woodside, and it would not be good practice to provide an indemnity in relation to the act or omission of other parties that Woodside would not necessarily engage with.

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- On 8 March 2024, Woodside emailed YAC via BSA a draft consultation agreement.
- On 12 March 2024, YAC via BSA emailed Woodside a proposed schedule of rates for consultation costs.
- On 4 April 2024, Woodside emailed BSA a review of the proposed schedule of rates for consultation costs and enquired when the next YAC board meeting would be.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) During face-to-face engagements related to this activity and others YAC requested further information on topics related to this proposed activity which was responded to during the meeting:</p> <ul style="list-style-type: none"> • whether Woodside has undertaken environmental studies and whether these studies are ongoing. <p>YAC also expressed the following:</p> <ul style="list-style-type: none"> • sadness at the potential for environmental impact • ranger programs could assist with environmental management and monitoring. • concern about potential impacts to patterns of whales, and potential collisions. <p>(2) YAC expressed a general interest in whales in relation to another EP. Woodside discussed controls protecting whales from an ecological perspective during meetings in which they were raised, no further feedback or comment was received on these topics.</p> <p>(3) Woodside has provided a draft Consultation Framework Agreement which includes suggested timeframes to settle the agreement and timeframes for ongoing consultation with the Board.</p> <p>(4) YAC stated, after 6 months of consultation, that it requires further time to consider the proposed activity and other activities.</p>	<p>(1) Woodside responded to YAC’s requests for further information during face-to-face engagements and no further information was requested on these topics.</p> <p>(2) Woodside noted YAC’s interest in whales and responded by explaining controls protecting whales from an ecological perspective.</p> <p>(3) Separate from consultation under Regulation 25, Woodside will establish a framework agreement with YAC. The agreement would be used to frame ongoing consultation. Sufficient information to allow informed assessment has already been provided by other means, including summary sheets developed by Indigenous staff, a face-to-face meeting with appropriate material (pictures, maps, video) and project attendance allowing opportunity to ask questions and seek further understanding.</p> <p>(4) Woodside does not agree with YAC’s claim it requires more time for consultation on this activity. Woodside met with YAC’s nominated representatives, at a location of YAC’s choice, on 5 July 2023 for a half day meeting where the activity was described face to face by Woodside project representatives, subject matter experts and First Nations relations advisers (see Section 6 for approach). This included specifically developed “plain English” material developed by First Nations personnel in collaboration with technical experts, maps, pictures and a short video visually communicating the drilling process. During the meeting YAC representatives were encouraged to control the pace of the engagement and seek clarification. YAC asked questions about the activity (see points 1, 2 and 3) which indicates that material was engaged with.</p> <p>(5) Woodside has agreed to further reasonable costs and a consultation agreement relevant to:</p> <ul style="list-style-type: none"> • Activities for which consultation under regulation 25 is closed but for which ongoing consultation applies (such as this activity); and • For consultation under future EPs. <p>(6) Woodside responded to YAC as to why it does not agree to YAC’s indemnity request. Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p>	<p>(1) Existing controls are considered sufficient, as described in Section 8.</p> <p>(2) Woodside updated Section 5.6.1 to record YAC’s interests, (including whales) and assessed potential impact on these, in Section 8.</p> <p>(3) Although consultation for the purpose of Regulation 25 is complete, Woodside will continue to engage with YAC through ongoing engagement and continue to progress with establishing a framework agreement as part of Woodside’s Program of Ongoing Engagement with Traditional Custodians, Appendix E.</p> <p>(4) Not required.</p> <p>(5) Not required.</p> <p>(6) Not required</p>

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<p>(5) YAC stated it requires further funding and a consultation agreement to consider the proposed activity and other activities.</p> <p>(6) YAC requested Woodside provide an indemnity clause in the Framework Agreement.</p>		
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Native Title Representative Bodies

Yamatji Marlpa Aboriginal Corporation (YMAC)
 YMAC is the Native Title Representative Body for the Yamatji and Pilbara regions of Western Australia. As such, they are not a Prescribed or Registered Native Title Body Corporate but exist to assist native title claimants and holders.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with YMAC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 6.4 of the EP. Specifically:

Sufficient Information:

- Consultation Information Sheet was publicly available on the BHP website in May 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Provided Consultation Information Sheets and Consultation Summary Sheets to YMAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity in a digestible, plain English format.

Reasonable Period:

- Woodside published advertisements in national, state, and relevant local newspapers including The Australian, The West Australian, North West Telegraph, Pilbara News, Midwest Times (15 February 2023) and the Geraldton Guardian (17 February 2023) advising of the proposed activities and requesting comments or feedback.
- Consultation information provided to YMAC on 13 March 2023 based on their functions, interests and activities.
- Woodside addressed and responded to YMAC over a 13-month period, demonstrating a “reasonable period” of consultation.

Woodside asked YMAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

Woodside has provided a reasonable opportunity for input since February 2023 and a genuine two-way dialogue has occurred.

Woodside engages in ongoing consultation, beyond that required by regulation 25, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on YMAC functions, interests or activities.

Summary of information provided and record of consultation:

- On 22 February 2023, Woodside emailed YMAC advising of the proposed activity (Appendix F, reference 2.25) and provided a Consultation Information Sheet.
- On 13 March 2023, Woodside emailed YMAC as to whether YMAC considers itself a ‘relevant person’ under subregulation 25 (1) of the Environment Regulations for the purposes of consultation on EPs and, if so, whether that relevance is limited to a facilitation function in its capacity as a representative of Traditional Owner groups/corporations that overlap or adjacent to the environment that may be affected (EMBA) of a particular activity (Appendix F, reference 2.26).
- On 15 March 2023, Woodside emailed YMAC requesting a position on whether YMAC consider itself a ‘relevant person’ under the Environment Regulations for the purpose of consultation in EPs.

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- **(1)** On 20 March 2023, YMAC replied to confirm that in its view it is a 'relevant person' under subregulation 25 (1) of the Environment Regulations for the purposes of consultation on EPs only in relation to its facilitation and coordination function as a Native Title Representative Body under applicable federal legislation. YMAC does not intend to provide substantive comment on the content of EPs.
- On 20 March 2023, Woodside emailed YMAC to thank it for its reply and to advise that that this assessment would be included in Woodside's EPs.
- On 20 March 2023, YMAC emailed Woodside confirming that they agree to their advice being included in reporting (YMAC is the representative for NTGAC and was the representative for Yinggarda Aboriginal Corporation until April 2023).
- On 12 June 2023, YMAC emailed Woodside on behalf of itself and its clients. The email attached:
 - **(2)** a proposal to fund in-house expertise to support consultations and administration of the consultation framework.
 - **(2)** a draft consultation framework
- On 12 June 2023, Woodside emailed YMAC, thanking them for the documents and informing them that Woodside would respond shortly.
- On 25 July 2023, Woodside emailed YMAC:
 - agreeing in principle to the draft consultation framework and funding proposal but seeking further discussion on details.
 - stating that Woodside is open to considering an industry funded position at YMAC to support the work they are facilitating.
 - attaching Woodside's Program for Ongoing Engagement with Traditional Custodians.
 - seeking a meeting with YMAC in relation to the draft consultation framework at YMAC's earliest convenience.
- On 14 December 2023, Woodside emailed YMAC following up on the consultation framework and providing suggestions for content to be included. No response has been received.
- On 28 February 2024, Woodside emailed YMAC with a letter setting out the draft terms of an agreement between Woodside and the three groups that YMAC represents. The agreement included the following topics:
 - Sufficient Information
 - Reasonable Period.
 - Provision of Information.
 - Objection or claims.
 - Publications
 - Cost and termination.
- On 29 February 2024, YMAC emailed Woodside acknowledging receipt of the information.

Environment Plan Controls	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) YMAC has provided feedback that, in its view, it is a 'relevant person' under subregulation 25 of the Environment Regulations for the purposes of consultation on EPs, only in relation to its facilitation and coordination function as a Native Title Representative Body under applicable Federal legislation. YMAC does not intend to provide substantive comment on the content of EPs.</p>	<p>(1) Woodside noted YMAC's position that it does not intend to provide substantive comment on EPs.</p> <p>(2) Woodside has assessed that the Program of Ongoing Engagement with Traditional Custodians will support ongoing consultation with YMAC and/or the groups it represents. This can address appropriate support for resourcing, separate from consultation under regulation 25, Sufficient information to allow informed assessment has already been provided by other means.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural</p>	<p>(1) Not required.</p> <p>(2) Although consultation for the purpose of regulation 25 is complete, Woodside will continue to engage with YMAC through ongoing engagement and continue engaging with YMAC in relation to its request for an industry funded position and a draft consultation framework. This is described further in the Program of</p>

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<p>(2) YMAC has provided feedback that it is seeking an industry-funded position to support consultations for this and other activities. YMAC has provided a draft consultation framework to assist the consultation process.</p>	<p>values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p>	<p>Ongoing Engagement with Traditional Custodians, Appendix E.</p>
<p>Local government and community representative groups or organisations</p>		
<p>Onslow Chamber of Commerce and Industry (Onslow CCI)</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Onslow Chamber of Commerce and Industry for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 6.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in May 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023. • Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, North West Telegraph, Pilbara News, Midwest Times (15 February 2023) and the Geraldton Guardian (17 February 2023) advising of the proposed activities and requesting comments or feedback. • Consultation information provided to Onslow Chamber of Commerce and Industry on 2 March 2023 based on their function, interest and activities. • Woodside has provided the Onslow Chamber of Commerce and Industry with the opportunity to provide feedback over a 14-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 2 March 2023, Woodside met with the Onslow Chamber of Commerce and Industry and discussed Environment Plans and consultation, including the activities proposed under this EP. Onslow CCI provided feedback they are over consulted by industry and do not provide comment back to operators but do share consultation materials with their Board. Woodside sought advice on how to continue sending consultation materials to the Onslow CCI for consultation on the EMBA. Woodside indicated it would check in periodically on any feedback. • On 8 May 2023, Woodside attended an Onslow Community Information Night hosted by the Shire of Ashburton. Woodside presented on decommissioning activities, including the activities proposed under this EP. Onslow Chamber of Commerce and Industry representatives attended. No concerns or questions were raised about the proposed activity. 		
<p>Summary of Feedback, Objection or Claim</p>	<p>Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response</p>	<p>Inclusion in Environment Plan</p>
<p>Onslow Chamber of Commerce and Industry met with Woodside and attended a presentation on decommissioning activities. No concerns or questions were raised about the proposed activity. Whilst feedback has been received, there were no objections or claims.</p>	<p>Woodside notes that no concerns or objections were raised with respect to the proposed activity.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p>	<p>Woodside considers the measures and controls described within this EP address the potential impact from the petroleum activity on the Onslow Chamber of Commerce and Industry’s functions, interests or activities. No additional measures or controls are required.</p>
<p>Other non-government groups or organisations</p>		
<p>Friends of the Earth Australia</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Friends of the Earth for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 6.4 of the EP. Specifically:</p>		
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- Consultation Information Sheet was publicly available on the BHP website in May 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Consultation information provided to Friends of the Earth on 8 February 2023 based on their function, interest and activities.
- Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, North West Telegraph, Pilbara News, Midwest Times (15 February 2023) and the Geraldton Guardian (17 February 2023) advising of the proposed activities and requesting comments or feedback.
- Woodside has addressed and responded to Friends of the Earth over a 14-month period.

Summary of information provided and record of consultation:

- On 11 January 2023, Friends of the Earth emailed Woodside requesting a meeting as the new Offshore Gas Campaigner for Friends of the Earth, with a brief to concentrate on the decommissioning process.
- On 23 January 2023, Woodside responded requesting a suitable date/time for a videocall in early February 2023.
- On 23 January 2023, Friends of the Earth emailed with a suitable time
- On 30 January 2023, Woodside confirmed the time and advised an invite would be sent
- On 8 February 2023, Woodside had a meeting with Friends of the Earth of Australia:
 - Friends of the Earth provided Woodside an overview of the organisation's functions, activities and interests.
 - Woodside provided an overview of its upcoming decommissioning activities, including activities proposed under this EP.
 - Friends of the Earth advised its desire for recycling, but also to leave certain infrastructure *in situ* because of the habitat it has created. Friends of the Earth also expressed its views on dredging to minimise turbidity and working with Traditional Custodians to be guided on their views.
 - Woodside provided an overview of its expanded approach to consultation on the EMBA for proposed activities, including risks and mitigations.
- On 9 February 2023, Woodside emailed Friends of the Earth Australia thanking it for its time to meet with Woodside on 8 February 2023. Woodside summarised the proposed activities, including the activities proposed under this EP and provided a link to the Activity Update Consultation Information Sheet as well as Woodside's Consultation website which can be subscribed to.
- On 30 May 2023, Woodside had an email exchange with Friends of the Earth to arrange an update on Woodside's decommissioning activities, including the activities proposed under this EP.
- On 30 May 2023, Woodside met with Friends of the Earth Australia and discussed the merits of leaving infrastructure *in situ*, where there are net environmental benefits for marine life and/or other relevant considerations. It was agreed a meeting to discuss decommissioning further would be beneficial.
- On 6 June 2023, Woodside sent an email to Friends of the Earth Australia thanking it for the 30 May 2023 discussion and provided a copy of a number of Consultation Information Sheets, including the activities proposed under this EP and offered to arrange a meeting.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>Friends of the Earth provided feedback including:</p> <ul style="list-style-type: none"> • its desire for recycling, but also to leave certain infrastructure <i>in situ</i> because of the habitat it has created. 	<p>Woodside has addressed Friends of the Earth's feedback, including:</p> <ul style="list-style-type: none"> • advising that decommissioned infrastructure unrelated to this EP would be transported for onshore recycling or reuse opportunities. Woodside also advised its focus on establishing local content opportunities for onshore recycling. • providing an overview of its expanded approach to consultation on the EMBA for proposed activities, including risks and mitigations. 	<p>Woodside considers the measures and controls described within this EP address the potential impact from the petroleum activity on Friends of the Earth's functions, interests or activities.</p> <p>No additional measures or controls are required.</p>

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<ul style="list-style-type: none"> its views on dredging to minimise turbidity and working with Traditional Custodians to be guided by their views. its interest is in marine life, social justice and Indigenous issues and welcomed a further meeting to further discuss proposed decommissioning activities. <p>Whilst feedback has been received, there were no objections or claims.</p>	<ul style="list-style-type: none"> Woodside recommended Friends of the Earth subscribe to the Woodside Consultation Page to receive all the latest updates on all Woodside's proposed activities. agreeing to send further information on proposed decommissioning activities. <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p>	
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Maritime Union of Australia (MUA)

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the MUA for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 6.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in May 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, North West Telegraph, Pilbara News, Midwest Times (15 February 2023) and the Geraldton Guardian (17 February 2023) advising of the proposed activities and requesting comments or feedback.
- Consultation information provided to MUA on 21 February 2023 based on their function, interest and activities.
- Woodside has addressed and responded to MUA over a 14-month period.

Summary of information provided and record of consultation:

- On 21 February 2023, Woodside emailed the MUA advising of the proposed activity (Appendix F, reference 2.23) and provided a Consultation Information Sheet.
- On 10 March 2023, Woodside sent a reminder email to the MUA advising of the proposed activity (Appendix F, reference 3.2) and provided a Consultation Information Sheet.
- On 15 March 2023, the MUA emailed Woodside thanking it for the opportunity to comment on the Stybarrow Decommissioning EPs. The MUA advised it had no further comments to make on the projects.
- On 15 March 2023 Woodside responded thanking the MUA for its response.

The summary above demonstrates that consultation for the purpose of 25 is complete however, as per Woodside's commitment to ongoing consultation, engagement has continued as summarised below:

Ongoing consultation:

- On 30 May 2023, Woodside met the new MUA representative at an industry conference and committed to follow up directly later in relation to the MUA position of removal of all infrastructure.
- On 6 June 2023, Woodside sent an email to the MUA thanking it for the 30 May 2023 discussion and provided a copy of a number of Consultation Information Sheets, including the activities proposed under this EP.
- On 14 June 2023, the MUA sent an email thanking Woodside for its 6 June 2023 email and provided potential dates for a meeting.
- Between 15 June 2023 and 22 June 2023, Woodside and MUA sent email correspondence to arrange a meeting on 5 July 2023.
- Between 3 July and 4 July 2023 Woodside and MUA exchanged emails to arrange an alternative meeting time.

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- On 18 July 2023, MUA emailed Woodside requesting further information and a meeting regarding Stybarrow EPs with equipment left *in situ*. MUA advised it had not provided feedback regarding this to date however now had reason to need further details. Information required included options assessment and criteria, images of equipment, final footprint and cumulative impacts of equipment left *in situ*.
- On 20 July 2023, Woodside responded to the MUA seeking available times to meet and discuss the information requested.
- On 21 July 2023, MUA responded with its meeting time availability.
- On 27 July 2023, Woodside offered meeting times suitable to the MUA.
- On 27 July 2023, MUA responded with a date to meet of 4 August 2023
- On 31 July 2023, Woodside set up the meeting for 4 August 2023 and agreed to provide information in advance of the meeting.
- On 3 August 2023, Woodside sent a briefing note to the MUA in response to the MUA's request for information in advance of the meeting.
- On 4 August 2023, Woodside met with the MUA to answer questions in relation to the decommissioning EPs where equipment was left *in situ*, including this EP. Summary of meeting as follows:
 - Woodside provided an overview of the *in situ* activities covered in this EP.
 - Woodside outlined the options assessment and criteria followed to arrive at the outcome of leaving equipment *in situ* as outlined in the February 2023 Consultation Information Sheet.
 - MUA questioned how many attempts were made to retrieve the wellhead before determining it should be left *in situ*. Woodside advised previous attempts were made to remove the wellhead.
 - MUA stated it would like Woodside to remove the suction piles that are planned to be left *in situ*. Woodside acknowledged this feedback.
 - In outlining the options assessment approach before any *in situ* decision, Woodside advised careful consideration is given to the best environmental and social outcome. Woodside advised various factors are weighed up including feedback from stakeholders to then provide a case to the regulator.
 - MUA discussed recent research about steel contamination and requested Woodside provide the source for a report that was referenced in an unrelated EP. Woodside responded to this request in a letter sent to the MUA on 20 October 2023 (see below). MUA highlighted a recent Commonwealth Scientific and Industrial Research Organisation (CSIRO) study in the Bass Strait that said more analysis on steel contamination is required.
 - MUA noted its role was to look after the social side of decommissioning work and represent workers. Woodside advised the MUA the *in situ* decommissioning work was part of a larger campaign that involved the employment of maritime workers across many large decommissioning activities.
 - The MUA stated the new consultation requirements were critical and the MUA had benefited from this. The MUA advised the more succinct and targeted the communications are the better.
- On 28 August 2023, the MUA sent correspondence via NOPSEMA as a follow up to the 4 August meeting summarised as follows:
 - MUA, as a key stakeholder in the industry, is a 'relevant person'
 - MUA reviewed the consultation information received for this EP and requested further information which resulted in a meeting with Woodside. After the meeting the MUA remained unconvinced an equal or better outcome would be achieved by leaving equipment in the ocean.
 - MUA rejected Woodside's requests to leave infrastructure *in situ* and points out that Woodside appears to be exhausting available time allowed by the regulator to seek concessions rather than adhere to the Offshore Petroleum and Greenhouse Gas Storage (OPGGS) Act
 - In an unrelated EP, Woodside referred to numerous studies about leaving steel *in situ*; the MUA requested the sources for this research be made available by Woodside. A recent CSIRO study raises issues for the safety of marine life in the vicinity of oil and gas fields and as such requires further analysis. MUA advised the full impact of sea dumping is careless, unnecessary and should be avoided.
 - This activity includes 10 suction piles that will remain *in situ*. MUA referred to an option in an unrelated EP that said only in the event of the retrieval option failing would the suction piles be cut at the mudline and left in place.

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- On 5 September 2023, the MUA sent Woodside its guide to consultation entitled *Preferred Consultation – For titleholders in the course of preparing for offshore infrastructure decommissioning*. The guide outlined the following:
 - The document’s purpose – outlining MUA’s priorities within the scope of current statutory consultation requirements.
 - MUA’s identification as a ‘relevant person’ for decommissioning activities.
 - MUA’s position on decommissioning offshore oil and gas infrastructure, that it – to progress positive outcomes for its membership and a belief that there is no benefit for the workforce or community in leaving infrastructure in the ocean.
 - The stakeholder engagement records shall not be misrepresented, and the MUA will contest any titleholder efforts that are tokenistic or superficial.
 - A benchmark of genuine consultation for a titleholder is to return a reasonable and supported assessment of the MUA’s responses and objections, supported by how the consultation has informed the adoption of alternate measures.
 - A minimum period of three months is reasonable for consultation information to be considered.
 - A useful summary for MUA purposes would feature vessel specifications, images, contractor, and crew agency details to assist members to prepare for upcoming work. This is unrelated to this EP.
 - When scientific evidence is purported to justify ‘equal or better outcomes’, this material is freely available upon request.
 - A concise and specific summary of deviation from base case of full removal is provided.
 - All objections and significant concerns that are raised by an individual stakeholder are shared by the titleholder to all other relevant persons.
- On 20 October 2023, Woodside responded to MUA’s letter received, via NOPSEMA, on 28 August 2023, as follows:
 - Woodside met with the MUA on 4 August 2023 and providing additional information on the *in situ* activities included in this EP.
 - Woodside explained the environmental considerations and options assessment and criteria used to determine this outcome.
 - Woodside advised it had fairly demonstrated alternative decommissioning approaches of not removing some infield equipment as these deliver equal or better environmental outcomes compared with complete removal.
 - Woodside requested more specific information to be able to locate the research referenced by the MUA in an unrelated EP as this could not be found. Woodside did not receive a response at the time of the EP submission.
 - Woodside noted receiving MUA’s recent guide to consultation and committed to ongoing discussion on decommissioning activities.
 - Woodside reaffirmed that leaving some infrastructure is warranted, not only on safety grounds but as it does deliver equal or better environmental outcomes.
 - The Stybarrow End State EP (this EP) will show the options assessment and alternatives for each piece of equipment and the risk assessment so as to manage risk to As Low As Reasonably Practicable (ALARP)
 - MUA’s feedback on this EP will be included in the EP submission.
- On 20 October 2023, Woodside responded to MUA’s 5 September 2023 correspondence as follows:
 - Woodside noted:
 - the MUA considers itself relevant for decommissioning activities and we will continue to consult the MUA for these activities.
 - the MUA position that there is no benefit for the workforce or community in leaving infrastructure in the ocean. Woodside noted that alternate decommissioning options, where there is equal or better environmental outcomes compared to complete removal, will be considered. In doing so, Woodside must meet all applicable requirements under the OPGGS Act and regulations, and other applicable laws. Woodside is willing to share this information with the MUA where feasible.
 - Environment Plan consultation outcomes with stakeholders with full transcripts is accurately reflected in documentation provided to NOPSEMA.
 - vessel specifications and activities may not be available at the time of consultation however Woodside selects suitable vessels based on activity requirements.

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- it would be inappropriate and impractical to share claims of one relevant person with all relevant persons consulted. Summaries of consultation is included in Environment Plans where stakeholders have not requested confidentiality. Claims received from a relevant person are specific to their interest, activities or functions and may not be specific to another relevant person's interest, activities or functions.
- Woodside will:
 - provide sufficient time and information for relevant persons to assess the impacts to their functions, interests or activities, however, a blanket three-month period following receipt of consultation information may not be suitable. Woodside will discuss the approach with the MUA for each activity so that information is provided in a concise form and understandable, and within a suitable timeframe for both parties.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>The MUA provided feedback:</p> <ul style="list-style-type: none"> • Noting concerns with infrastructure proposed to be left <i>in situ</i> rather than remove it under the OPPGS Act. • Stating that it is the MUA's position that full removal of infrastructure should always be the preferred practice. • New research determines that further investigation is required into the impact of steel contamination over time of equipment left <i>in situ</i>. 	<p>Woodside has addressed the MUA's feedback, including:</p> <ul style="list-style-type: none"> • Noting that each of the Stybarrow EPs, including the activities proposed under this EP, set out an assessment of feasible decommissioning options or alternatives for each piece of equipment or infrastructure and also risk assesses the alternatives so as to manage risk to ALARP, which is consistent with the provisions of the OPGGS Act. • Reaffirming that leaving some infrastructure is warranted, not only on safety grounds but as it delivers equal or better environmental outcomes. • Acknowledging the recent CSIRO research, however unrelated to this EP and location of the activity, and seeking further information to be able to share Woodside references to related research in an unrelated EP. <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p>	<p>Woodside has consulted the MUA in the course of preparing this EP. Woodside has assessed the claims or objections raised by the MUA. No additional measures or controls have been put in place.</p> <p>Woodside considers the measures and controls described within this EP address the potential impact from the proposed activities on the MUA's functions, interests or activities.</p>

Research institutes and local conservation groups or organisations

Australian Institute of Marine Science (AIMS)

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with AIMS for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 6.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in May 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, North West Telegraph, Pilbara News, Midwest Times (15 February 2023) and the Geraldton Guardian (17 February 2023) advising of the proposed activities and requesting comments or feedback.
- Consultation information provided to AIMS on 21 February 2023 based on their function, interest and activities.
- Woodside has addressed and responded to AIMS over a 14-month period.

Summary of information provided and record of consultation:

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- On 21 February 2023, Woodside emailed AIMS advising of the proposed activity (Appendix F, reference 2.28) and provided a Consultation Information Sheet.
- On 10 March 2023, Woodside sent a reminder email to AIMS advising of the proposed activity (Appendix F, reference 3.16) and provided a Consultation Information Sheet.
- On 21 March 2023, AIMS responded to Woodside and said that it will be undertaking offshore vessel and coring operations in this region out to 500 m depth over the next 12 months (actual dates yet to be determined). AIMS requested maintaining communications to minimise the risk of respective activity overlap.
- On 27 March 2023, Woodside responded thanking AIMS for its feedback and sought clarity on the region where activities may take place. Woodside committed to ongoing communication to support planning of respective activities.
- On 2 June 2023, Woodside followed up with AIMS with respect to the location for where its activities are proposed.
- On 10 July 2023, AIMS responded advising it was planning the sampling design for the coring work to minimise the risk of overlap with Woodside operations/infrastructure. AIMS advised it had applied a 5 km buffer zone around all known structures however requested from Woodside access to a GIS layer of infrastructure within a given polygon.
- On 18 July 2023, Woodside responded to AIMS with the GIS infrastructure for Stybarrow. Woodside committed to providing more up to information about infrastructure as soon as it is available and will share this with AIMS.
- On 30 November 2023, Woodside sent updated GIS infrastructure files to AIMS for Stybarrow & Griffin projects.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>AIMS responded that it will be undertaking offshore vessel and coring operations in this region out to 500 m depth over the next 12 months (actual dates yet to be determined). AIMS requested maintaining communications to minimise the risk of respective activity overlap.</p> <p>AIMS requested GIS data within a given polygon to ensure it did not overlap with Woodside operations/infrastructure.</p>	<p>Woodside sought clarity on the region where activities may take place and committed to ongoing communication to support planning of respective activities within the Stybarrow field.</p> <p>Woodside notes that no activities are planned for this EP and therefore this advice isn't applicable for this EP.</p> <p>Woodside provided AIMS the GIS data requested.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p>	<p>Woodside has consulted AIMS in the course of preparing this EP. Woodside has assessed the claims or objections raised by AIMS.</p> <p>No additional measures or controls are required.</p> <p>Woodside considers the measures and controls described within this EP address the potential impact from the petroleum activity on AIM's functions, interests or activities.</p>

Table 2: Engagement Report with Persons or Organisations Assessed as Not Relevant

Commonwealth and WA State Government Departments or Agencies – Marine		
Australian Border Force (ABF)		
<p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 27 May 2022, Woodside emailed ABF and provided the Stybarrow Decommissioning Environment Plans Fact Sheet (Appendix F, reference 1.18). On 16 February 2023, Woodside emailed ABF advising of the proposed activity (Appendix F, reference 2.2) and provided a Consultation Information Sheet. On 10 March 2023, Woodside sent a reminder email to ABF advising of the proposed activity (Appendix F, reference 3.6) and provided a Consultation Information Sheet. 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).	No additional measures or controls are required.
Australian Maritime Safety Authority (AMSA) - Marine Safety		
<p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 27 May 2022, Woodside emailed AMSA – Marine Safety and provided the Stybarrow Decommissioning Environment Plans Fact Sheet (Appendix F, reference 1.2). On 1 June 2022, AMSA responded to Woodside requesting that AHO is contacted no less than four weeks before operations, with details relevant to operations, in order for the AHO to promulgate the appropriate Notice to Mariners. AMSA further requested that the main vessel/s notify AMSA’s Joint Rescue Coordination Centre (JRCC) for promulgation of radio-navigation warnings 24-48 hours before operations commence. JRCC will require the vessel details (including name, call sign and Maritime Mobile Service Identity (MMSI)), satellite communications details (including INMARSAT-C and satellite telephone), area of operation, requested clearance from other vessels and need to be advised when operations start and end. <ul style="list-style-type: none"> AMSA reminded Woodside of its obligations to comply with the International Rules for Preventing Collisions at Sea (COLREGs), in particular, the use of appropriate lights and shapes to reflect the nature of operations (e.g., restricted in the ability to manoeuvre). Vessels should also ensure their navigation status is set correctly in the ship’s Automatic Identification System (AIS) unit. AMSA provided contact details for Woodside to obtain a vessel traffic plot showing AIS traffic data. On 27 July 2022, Woodside responded to AMSA advising it would: <ul style="list-style-type: none"> Notify the AHO no less than four weeks before operations, with details relevant to the operations in order for the AHO to promulgate the appropriate Notice to Mariners. Notify AMSA’s JRCC at least 24-48 hours before operations commence, in order to promulgate radio-navigation warnings. Notify AHO and the JRCC in the event of changes to intended operations. <p>Woodside also noted AMSA’s feedback on the exhibition of appropriate lights and shapes and confirmed it will:</p> <ul style="list-style-type: none"> Comply with the International Rules for Preventing Collisions at Sea. Ensure vessel navigation status is set correctly in the ship’s AIS unit. On 16 February 2023, Woodside emailed AMSA advising of the proposed activity (Appendix F, reference 2.7) and provided a Consultation Information Sheet. 		

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<ul style="list-style-type: none"> On 15 March 2023, Woodside sent a reminder email to AMSA advising of the proposed activity (Appendix F, reference 3.19) and provided shipping lane figures. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>AMSA provided feedback and requested:</p> <ul style="list-style-type: none"> Vessels notify JRCC 24-48 hours before ops commence. Woodside notify AHO no less than 4 weeks before operations commence. Woodside provides updates on any changes to the activity. 	<p>As there is no activity for the proposed EP, no notifications are required.</p> <p>Woodside will contact/notify:</p> <ul style="list-style-type: none"> the AHO no less than 4 weeks before operations commence AMSA's JRCC at least 24-48 hours before operations commence provide updates to both the AHO and AMSA on any changes <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p>	<p>Woodside considers the measures and controls described within this EP address the potential impact from the proposed activities on AMSA's functions, interests or activities.</p> <p>No additional measures or controls are required.</p>
<p>Department of Transport (DoT)</p>		
<p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 27 May 2022, Woodside emailed DoT and provided the Stybarrow P&A and Decommissioning Environment Plans Fact Sheet (Appendix F, reference 1.7). On 7 June 2022, DoT responded to Woodside providing advice on consultation if there was a risk that a spill could impact State waters from the proposed activity which is unrelated to this EP. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>No feedback, objections or claims received with respect to this EP.</p>	<p>Woodside notes that engagement on this EP was part of broader consultation on the decommissioning of the Stybarrow field. There is no proposed activity for this EP as infrastructure is proposed to be left <i>in situ</i>.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p>	<p>No additional measures or controls are required.</p>
<p>Commonwealth and WA State Government Departments or Agencies – Environment</p>		
<p>Director of National Parks (DNP)</p>		

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Summary of information provided and record of consultation:

- On 27 May 2022, Woodside emailed DNP and provided the Stybarrow P&A and Decommissioning Environment Plans Fact Sheet (Appendix F, reference 1.4).
- On 26 July 2022, DNP responded and requested further information in relation to the assessment undertaken to guide decisions to remove or leave equipment *in situ* and advised it can include, but not be limited to, environmental risks / benefits analysis.
 - DNP also made the following comments and requests:
 - Proposed activities may directly affect the values present in the marine parks and should be factored into the EP.
 - Proposed activities should be undertaken with the utmost care and an absolute avoidance of unplanned impacts upon the environment now and into the future given the proximity of the operational area to the nearby Ningaloo Coast World Heritage Area.
 - The EP should demonstrate best practice in choice of activities, such as leaving equipment *in situ*, and mitigating the activity's impact upon the environment.
 - DNP provided feedback on biologically important areas (BIAs) that are present or nearby to the operational area.
 - DNP provided feedback on Key Ecological Features (KEF) that are present or nearby to the operational area, which are identified values of the Gascoyne and Ningaloo Marine Parks and activities that could affect these features should be factored into risk assessments.
 - DNP noted that there may also be cultural values present and provided advice on consultation with Indigenous peoples and representative organisations where sea country could be affected by the proposed activities.
 - DNP also provided the following guidance on resource materials to assist in the development of the EP with respect to assessing Australian marine parks and their representativeness, including:
 - The North-west Marine Parks Network Management Plan 2018 (management plan)
 - The Australian Marine Parks Science Atlas
- On 28 July 2022, Woodside emailed DNP and provided a summary of the decommissioning assessment options and criteria, and high-level outcomes.
 - Woodside also provided the following feedback:
 - Stated that potential impacts to marine park values had been assessed in developing the EP.
 - Acknowledged the environmental sensitivity of the region.
 - The EP includes an assessment of planned activities, including leaving equipment *in situ*, and mitigating the activity's impact upon the environment.
 - Confirmed that BIAs had been assessed in the EP.
 - Confirmed that KEFs had been assessed in the EP.
 - Confirmed information had been provided to the Yamatji Marlpa Aboriginal Corporation on behalf of the Nghanurra Thanardi Garrbu Aboriginal Corporation as part of consultation activities.
 - Woodside also acknowledged references provided by DNP to support development of the EP, these being:
 - The North West Marine Parks Network Management Plan 2018 (management plan)
 - The Australian Marine Parks Science Atlas
- On 28 July 2022, DNP responded to Woodside noting it understood the matters it raised will be captured in the EP. DNP requested parts of the draft EP that relate to the assessment of decommissioning options.
- On 29 July 2022, Woodside responded and thanked DNP for its response and provided the following feedback:
 - Woodside advised that it was not able to provide more fulsome details of the options assessment in advance of the EP being finalised and suggested that DNP is provided relevant references when the EP is finalised and has been submitted to NOPSEMA. This would allow DNP access to all relevant information in order to provide informed feedback. Woodside committed to ongoing consultation with DNP through EP assessment, with a summary of all comments included in the final EP for assessment and acceptance by NOPSEMA.
- On 29 July 2022, DNP responded by email acknowledging Woodside's response and requesting the Department be advised when the EP has been published on NOPSEMA's website. The Department will make contact if it has any additional questions or feedback.

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- On 16 February 2023, Woodside emailed DNP advising of the proposed activity considering potential risks to Australian Marine Parks (AMPs) (Appendix F, reference 2.14), and provided a Consultation Information Sheet.
- On 10 March 2023, Woodside sent a reminder email to DNP advising of the proposed activity (Appendix F, reference 3.14) and provided a Consultation Information Sheet.
- On 21 April 2023, the DNP responded, thanked Woodside for the opportunity to comment.
 - The DNP confirmed that the planned activities do not occur within any AMPs and there are no authorisation requirements from the DNP.
 - The DNP made the following objection with respect to the Stybarrow decommissioning EP but unrelated to this EP: That the buffer from turtle nesting beaches is increased from 12 km in the information sheet to 20 km, to support greater consistency with the 'Recovery Plan for Marine Turtles in Australia'.
 - The DNP noted it had worked closely with NOPSEMA to develop and publish a guidance note and included a link to the online document.
 - The DNP noted that the EP should:
 - identify and manage all impacts and risks on Australian marine park values (including ecosystem values) to an acceptable level and consider all options to avoid or reduce them to As Low As Reasonably Practicable (ALARP).
 - clearly demonstrate that the activity will not be inconsistent with the management plan.
 - The DNP also noted:
 - the North-west Marine Parks Network Management Plan 2018 (management plan) came into effect on 1 July 2018 and provides further information on values for Gascoyne Marine Park, which is the nearest to the proposed activity.
 - Australian marine park values are broadly defined into four categories: natural (including ecosystems), cultural, heritage and socio-economic. Information on the values for the marine parks is also located on the Australian Marine Parks Science Atlas.
- On 4 May 2023, Woodside responded to the DNP thanking it for its response and:
 - Noted the DNP's confirmation that planned activities do not overlap any AMPs, and as such there are no approvals required from DNP for this proposed activity.
 - noted that, as this EP proposes to leave infrastructure *in situ*, the DNP's request with respect to buffers from turtle nesting beaches is not relevant and therefore has not been applied.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>DNP responded requesting further information on decommissioning options and criteria and high-level outcomes under this EP.</p> <p>Further, DNP:</p> <ul style="list-style-type: none"> • requested that Woodside identify and manage all impacts and risks on Australian marine park values (including ecosystem values) to an acceptable level and consider all options to avoid or reduce them to ALARP. • advised that the planned activities did not overlap any AMPs and there are no authorisation requirements from the DNP. 	<p>Woodside has addressed the DNP's feedback, including:</p> <ul style="list-style-type: none"> • noted the BIAs and KEFs that had been identified and assessed in the EP. • provided a summary of infrastructure proposed to be left <i>in situ</i>, assessment options and assessment criteria. • noted DNP's provision of its guidance note for the preparation EPs for activities that may impact AMPs. • Woodside confirmed that it had referenced the North-west Marine Parks Network Management Plan 2018 in the planning the EP, as well as the Australian Marine Parks Science Atlas as a source of information on the values for the marine parks. <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p>	<p>The Environment Plan demonstrates that the EMBA is outside the boundaries of a proclaimed Commonwealth Marine Park and identifies that there are no credible impacts to the values of any Commonwealth Marine Parks as a result of the petroleum activity (Section 5.4).</p> <p>This EP demonstrates how Woodside will identify and managed 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 (Section 9).</p>

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		<p>Woodside considers the measures and controls described within this EP address the potential impact from the proposed activities on DNP's functions, interests or activities.</p> <p>No additional measures or controls are required.</p>
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Ningaloo Coast World Heritage Advisory Committee (NCWHAC)

<p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 27 May 2022, Woodside emailed NCWHAC and provided the Stybarrow P&A and Decommissioning Environment Plans Fact Sheet (Appendix F, reference 1.20). On 16 February 2023, Woodside emailed NCWHAC advising of the proposed activity (Appendix F, reference 2.29), and provided a Consultation Information Sheet. On 10 March 2023, Woodside sent a reminder email to NCWHAC advising of the proposed activity (Appendix F, reference 3.24) and provided a Consultation Information Sheet. On 15 April 2023, NCWHAC responded to Woodside via NOPSEMA noting additional potential impacts to the outstanding universal value (OUV) within and adjacent to NCHWA for the Stybarrow field decommissioning. The NCWHAC noted cumulative impacts from infrastructure left <i>in situ</i> and requested a review of other infrastructure left <i>in situ</i> near the site. On 6 June 2023, Woodside responded to the NCWHAC regarding its comments raised with respect to the proposed decommissioning of the Stybarrow field and advised a full environmental impact assessment of the potential impacts of leaving infrastructure <i>in situ</i> had been completed in accordance with section 572 of the <i>Offshore Petroleum and Greenhouse Gas Storage Act 2006</i>. 		
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Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>The NCHWAC provided feedback with respect to the proposed activity. It noted cumulative impacts from infrastructure left <i>in situ</i> and requested a review of other infrastructure left <i>in situ</i> near the site.</p>	<p>Woodside has addressed the NCWHAC's feedback in relation to cumulative impacts of infrastructure left <i>in situ</i> advising it had conducted a full environmental impact assessment of the potential impacts of leaving infrastructure <i>in situ</i>.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p>	<p>Woodside has consulted the NCHWAC in the course of preparing this EP. Woodside has assessed the claims or objections raised by the NCHWAC. No additional measures or controls have been put in place.</p> <p>Woodside considers the measures and controls described within this EP address the potential impact from the proposed activities on the NCHWAC's functions, interests or activities.</p>

Commonwealth Commercial fisheries and representative bodies

Australian Southern Bluefin Tuna Industry Association (ASBTIA)

<p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 1 June 2023, Woodside emailed the ASBTIA advising of the proposed activity (Appendix F, reference 3.22) and provided a Consultation Information Sheet On 23 June 2023, Woodside sent a reminder email to ASBTIA advising of the proposed activity (Appendix F, reference 3.28) and provided a Consultation Information Sheet.

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Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	<p>Woodside has provided consultation information to AFMA, DAFF - Fisheries, CFA, ASBTIA, Tuna Australia, WAFIC and individual relevant licence holders.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 5.6.2 of this EP.</p> <p>No additional measures or controls are required.</p>
Tuna Australia		
<p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 17 June 2022, Tuna Australia provided the following feedback on the proposed activity: <ul style="list-style-type: none"> ○ Tuna Australia is putting together a consultation submission on the Stybarrow decommissioning environmental plans. ○ Tuna Australia sought additional time beyond the consultation closing date to provide feedback on proposed activities as it was still waiting on feedback from members holding Statutory Fishing Rights in the Western Tuna and Billfish Fishery (WTBF). • On 1 July 2022, Tuna Australia: <ul style="list-style-type: none"> ○ provided background information on the fishery, including target species and historical locations for fishing activity. ○ noted that there had been no recent fishing effort at the Stybarrow location. ○ advised that several of its members were pursuing joint venture fishing arrangements with the Australian government to work these fishing grounds. ○ advised it was assisting a fisher to access WTBF licences and quota to commence fishing activities from Exmouth from the start of the 2023 season. ○ drew Woodside's attention to the importance of the Leeuwin current as an important fauna distribution feature, including the target species of the WTBF. • On 29 July 2022, Woodside responded to Tuna Australia and: <ul style="list-style-type: none"> ○ acknowledged the feedback provided by Tuna Australia on behalf of its members on current and potential future fishing activities. ○ provided additional information on expected impacts resulting from items proposed to be left <i>in situ</i>. ○ confirmed it planned to undertake proposed activities in accordance with the Environment Plan and as expeditiously as possible. ○ provided further detail on activities and the completion date associated with the progressive decommissioning of the Stybarrow Field. • On 16 February 2023, Woodside emailed Tuna Australia advising of the proposed activity (Appendix F, reference 2.10) and provided a Consultation Information Sheet. • On 10 March 2023, Woodside sent a reminder email to Tuna Australia advising of the proposed activity (Appendix F, reference 3.11) and provided a Consultation Information Sheet. • On 15 March 2023 Tuna Australia responded and provided a position statement for consideration prior to consultation taking place. • On 26 May 2023, Woodside had a phone call with the Tuna Australia CEO and explained that Woodside would like to discuss a path forward following receipt of Tuna Australia's Position Statement across its EP activities, including the activities proposed under this EP. 		

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- Noted Tuna Australia's correspondence to NOPSEMA and copied to Woodside dated 17 May 2023, with respect to unrelated EPs.
- Noted Tuna Australia's previous EP consultation feedback that Woodside had responded to with respect to unrelated EPs.
- Reiterated that Woodside does not expect Tuna Australia to provide a consultation report for each of its EPs and are concerned about this potential misalignment on expectations.
- Tuna Australia advised it would like to discuss a way forward as Woodside suggested and requested Woodside call Tuna Australia on 30 May 2023, which Woodside committed to.
- On 2 June 2023, Woodside called Tuna Australia to follow up on its phone call on 26 May 2023.
 - Woodside left a message requesting a call back and the opportunity to meet with Tuna Australia to discuss Woodside's portfolio of environment plan activities.
 - Woodside requested the opportunity to discuss options to consult with Tuna Australia and potentially lessen the burden on Tuna Australia for providing feedback on Woodside's EPs.
 - Woodside offered the opportunity to take Tuna Australia through the entire EP portfolio, inclusive of decommissioning, so Tuna Australia could better assess the volume of activities.
 - Woodside reiterated that there was no expectation for Tuna Australia to provide a consultation report on each individual EP, and potentially there is an opportunity for Woodside and Tuna Australia to work together on a more strategic approach.
- On 20 June 2023, Woodside had a meeting with Tuna Australia and:
 - Discussed Tuna Australia's position statement, and in particular its reference to activities that have the potential to impact vessel navigation, fishing activities, and/or the conservation of fish resources.
 - Provided an overview of Woodside's activities and changes to consultation requirements following recent case law.
 - Tuna Australia agreed to provide more detail on how it would distribute consultation materials to its membership/licence holders and the format of any report arising from the data collected.
 - Woodside committed to review Tuna Australia's Service Agreement.
- On 26 June 2023, Woodside emailed Tuna Australia thanking it for the 20 June 2023 meeting. Woodside:
 - Noted the clarity Tuna Australia's position statement provided with respect to being contacted when the proposed activity has the potential to impact vessel navigation, fishing activities, and/or the conservation of fish resources.
 - Noted that Woodside had provided a description of its activities and how recent case law and NOPSEMA guidance had resulted in Woodside undertaking consultation on the widest potential EMBA, which is a significantly greater area than any planned activity and any activity within an Operational Area.
 - Noted Tuna Australia's agreement to provide more detail on how Tuna Australia will distribute consultation materials to its members/licence holders and the format of any report.
- On 30 June 2023, Tuna Australia responded to Woodside and:
 - Noted outcomes of the recent case law focussed on stakeholder engagement and ensuring energy companies meet regulatory requirements and NOPSEMA guidelines.
 - Requested Woodside send the recent case law.
 - Reached out to energy companies who have executed a services agreement with Tuna Australia and asked whether Tuna Australia could inform Woodside about their working relationship. Beach Energy confirmed it was happy for Tuna Australia to share its details.
 - Advised how it contacts concession holders and what it provides to them.
 - Provided a Tuna Australia contact who manages engagement with energy companies to progress a service agreement with Tuna Australia
- On 17 July 2023, Woodside emailed Tuna Australia and confirmed:
 - Woodside's legal team had reviewed the Tuna Australia document and requested some minor changes to be made.
 - Woodside asked Tuna Australia if a marked-up version of the Service Agreement would be the simplest way for Tuna Australia to review
 - Woodside attached a Supplier Questionnaire as part of its due diligence process and asked Tuna Australia to complete the form.
- On 18 July 2023, Tuna Australia emailed Woodside and confirmed:

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- Woodside should send a marked-up version of the Service Agreement for Tuna Australia to review.
- Tuna Australia would fill out the Supplier Questionnaire and return in the next couple of days.
- On 18 July 2023, Woodside emailed Tuna Australia and sent a marked-up version of the Service Agreement for Tuna Australia to review.
- On 19 July 2023, Tuna Australia emailed Woodside and thanked it for sending through edits to Tuna Australia's services agreement and commented:
 - Tuna Australia does not want any changes made to Schedule 2 of their Service Agreement and if Woodside has requirements outside of what Tuna Australia provides, then this will need to be discussed, agreed, and costed accordingly.
 - Tuna Australia would like further details on the Annual service for the Woodside Master Existing document including the rationale for the payment proposed.
 - Tuna Australia does not agree to a fixed price for the above bodies of work. Tuna Australia wants clarification on what the Annual service entails, and how the fixed priced value was arrived at.
 - Re the fixed fee for delivery of a specific consultation service, Tuna Australia need to remain flexible to clients' needs and discuss additional works should they be required. Tuna Australia says it specified in the schedule that it would never proceed with more work or charge more money without approval and this should suffice for Woodside.
 - Tuna Australia does not agree on the current terms which have been changed in Item 2 of Schedule 1 and says it seeks a two-year agreement as per the agreement template.
- On 2 August 2023, Woodside emailed Tuna Australia, thanked them for their response re the Service Agreement and advised that Woodside's legal team will review, and Woodside will revert as soon as possible. Woodside asked Tuna Australia to please complete the Supplier Questionnaire which was sent on 17 July 2023.
- On 3 August 2023, Tuna Australia replied, apologised for the delay, and sent the completed Supplier Questionnaire to Woodside.
- On 8 August 2023, Tuna Australia responded regarding another EP stating that as per its recent discussions with Woodside, Tuna Australia could consult on the EP once it had a services agreement in place.
- On 23 August 2023, Tuna Australia emailed Woodside following up on Woodside's consultation requirements with the tuna longline industry regarding another EP. Tuna Australia asked for clarity on whether Woodside was planning to engage Tuna Australia to consult on behalf of the tuna longline industry on this and other upcoming EPs that Woodside was seeking feedback on.
- On 30 August 2023, Woodside emailed Tuna Australia and advised that Tuna Australia's feedback on the Service Agreement had been discussed with Woodside's legal team. Woodside asked for clarity on whether Tuna Australia would accept section 15: Ethical Business Practices. Once this had been accepted, Woodside could work through Tuna Australia's other points.
- On 4 September 2023, Tuna Australia emailed Woodside and advised that it had seen these anti bribery and corruption clauses included in the vendor registration process of other energy companies but had not seen it proposed inside an agreement before. Tuna Australia advised it was not against including them in the agreement, but asked if it was the best place for it.
- On 6 November 2023, Tuna Australia emailed Woodside in regards to another EP, and said:
 - it is prepared to assist Woodside to ensure this (and other) environmental plans are comprehensive and extend to all relevant persons, and that Woodside is aware the AFMA webpage requesting concession owners and holders to be contacted is out of date.
 - the proponent must address planned fishing efforts and development of the fishery, and that focussing on historical fishing effort as the basis for validating the environment plan is a flawed assessment.
 - it is concerned recent consultation by energy companies has involved accessing mailing lists sourced from AFMA or elsewhere, as some contact lists are outdated, inaccurate and not fit-for-purpose as they do not contact the required target audience; while Tuna Australia's database is up to date, accurate and actively managed and reviewed.
 - it has offered to assist energy companies to meet consultation and reporting requirements genuinely and comprehensively. Its view is that consultation not conducted through its services is highly likely to be incomplete.
 - Woodside should advise Tuna Australia if it wishes to progress with a services agreement and work collaboratively.
- On 22 November 2023, Woodside responded thanking Tuna Australia for its email and advised:
 - as Tuna Australia is aware, offshore proponents consult relevant persons under the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009.

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- Woodside's consultation process identifies relevant persons and provides them sufficient information and a reasonable period to make an informed assessment of the possible consequences of the proposed activity on their functions, interests, and activities.
- Woodside obtains contact details of individual Commonwealth fishing statutory fishing rights and fishing permit holders so that consultation is consistent with the Regulations. As noted on its website, AFMA's expectation is that petroleum operators consult with fishing operators about all activities and projects which may affect day-to-day fishing activities.
- In addition to consulting individual licence holders, Woodside consults relevant fishing industry associations and representative bodies such as Tuna Australia and Commonwealth Fisheries Association and refers to the AFMA website to help inform which associations and bodies are relevant.
- While the management area for the Western Tuna and Billfish Fishery overlaps the Operational Area for the EP, based on AFMA data, no recent fishing effort has occurred within the Operational Area for at least the past 10 years. Despite this, Woodside chose to consult licence holders in this fishery.
- The Offshore Environment Regulations do not require entry into service agreements in order to meet Environment Plan consultation requirements.
- On 5 December 2023, Tuna Australia responded and thanked Woodside for its advice. Tuna Australia noted:
 - concern that Woodside 'elected to cherry-pick' how to meet statutory requirements, by e.g., focussing on fishing effort and disregarding important information in the *OPGGS Act 2006* and Regulations.
 - it wished to pause the process while it takes advice.
 - Tuna Australia can assist Woodside to develop an environmental plan that is significantly improved and meets regulatory requirements.
- On 20 December 2023, Woodside responded and thanked Tuna Australia for its response. Woodside advised:
 - Woodside has met its legislative and regulatory requirements in the development and implementation of the Environment Plan.
 - Woodside will continue to consult Tuna Australia and individual Commonwealth licence holders for proposed activities, where relevant and as appropriate.
 - consultation is voluntary and Tuna Australia can decide whether it wished to engage in the process or not.
- On 21 December 2023, Tuna Australia responded and thanked Woodside for its response. Tuna Australia noted:
 - the *OPGGS Act 2006* clearly states that, when developing an EP, the proponent must demonstrate they can "carry on those activities in a manner that does not interfere with navigation, fishing or the conservation of the resources of the sea and seabed". Tuna Australia has provided Woodside with its industry position statement and is prepared to provide services to Woodside to ensure the Environmental Plan meets legislative and regulatory requirements. Tuna Australia will ensure thorough and comprehensive consultation on the proposed EP to ensure activities do not have an adverse impact on the fishery and marine environment, Tuna Australia considers that, without this advice, any EP submitted to NOPSEMA will be incomplete, inadequate and will not meet regulatory requirements.
 - Tuna Australia would welcome comment from NOPSEMA (CCed in this email by Tuna Australia) on the content required in an EP to meet regulatory requirements when considering potential impacts on Australian tuna fisheries, especially in the context of knowing that Tuna Australia can comprehensively provide this information through a services agreement and Woodside has chosen not to engage.
 - Tuna Australia is breaking for the festive season and urged Woodside to consider whether it would like to enter a services agreement and to advise Tuna Australia accordingly in the week starting 8 January.
- On 5 February 2024, Tuna Australia emailed Woodside regarding another EP and provided feedback on Woodside's approach to consultation. It noted:
 - Woodside had decided that rather than developing an ongoing working relationship with Tuna Australia, it would contact all tuna concession owners and holders by accessing the AFMA database.
 - There were many AFMA permit registers depending on the fishery and the permit register changed regularly as entitlements were sold and traded. This meant Woodside would need to request a new permit register every time it submitted an EP or a variation to an EP. Woodside would need to reference when it sourced the permit registry to ensure NOPSEMA was assured the list was not outdated.
 - After reviewing the FMA 1991 Act and Regulations, Tuna Australia believed Woodside had been provided permit register contact details in error. It was following up on the use of industry data with AFMA and had not ruled out legally challenging the provision of industry data sourced via AFMA.

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- On 19 February 2024, Woodside responded to Tuna Australia and advised:
 - Woodside was willing to have a working relationship, however it noted Tuna Australia's position was to only do this via a fee-for-service agreement.
 - Woodside had previously engaged with Tuna Australia on a draft agreement; however it was not willing to make amendments to the draft agreement proposed by Woodside.
 - Outside a fee-for-service agreement, Woodside was willing to explore options on how best to consult Tuna Australia and licence holders.
 - As previously advised, Tuna Australia obtained contact details of individual Commonwealth statutory fishing rights and fishing permit holders so consultation was consistent with the Regulations. Consultation with fishery operators met the expectation of AFMA that petroleum operators consulted with fishing operators about all activities and projects which might affect day-to-day fishing activities.
 - Woodside regularly updated contact details of individual licence holders to facilitate consultation.
 - Woodside noted Tuna Australia was engaging with AFMA on the provision of permit register contact details under the Fisheries Management Act 1991, and Regulations.
- On 19 February 2024, Tuna Australia responded and advised:
 - The offer it previously received from Woodside to charter a report on fisheries was unacceptable.
 - It could reach out to all tuna concession owners and holders relevant to proposed EPs ensuring improved outcomes to meet regulatory requirements. Other energy companies had executed a services agreement with Tuna Australia and were pleased with the engagement and detailed advice.
 - It had proposed a simple process ensuring Woodside met consultation obligations while not placing disproportionate burden on other sectors, and if Woodside would like an updated services agreement, it should let Tuna Australia know.
- On 7 March 2024, Woodside responded and thanked Tuna Australia for its response and asked for the proposed updated services agreement. Woodside advised that it would like to ensure relevant clauses were appropriately considered including those on ethical business practices.
- On 11 March 2024, Tuna Australia responded and provided a copy of the services agreement. Tuna Australia noted that late last year it was required to fill out a supplier questionnaire regarding ethical business practices and attached this form again.
- On 20 March 2024, Woodside emailed Tuna Australia and:
 - Reiterated it remains willing to have a working relationship with Tuna Australia and noted Tuna Australia is only interested in this through a fee-for-service agreement.
 - Noted that the latest provided version of a draft agreement appeared to not contain substantive changes, asking Tuna Australia to clarify which, if any, changes had been made.
 - Emphasised that consultation is voluntary, and that Tuna Australia may decide if they wish to partake or not.
 - Advised that Woodside does not need to enter a fee-for-service agreement with Tuna Australia to meet Environment Plan consultation requirements.
- On 25 March 2024, Tuna Australia replied by email and:
 - Commented on Woodside's draft agreement and ethical business practice administrative paperwork. Noted Tuna Australia maintain their position that they will only support Woodside's consultation through a services agreement.
 - Again commented that Woodside's fee proposal for an annual review was unacceptable. Noted their fees are fair and reflect their status as subject matter experts in tuna fisheries.
 - Advised of increased fee to reflect CPI.
- On 3 April 2024, Woodside emailed Tuna Australia and stated it:
 - Notes that Tuna Australia is not willing to revise its agreement or address issues identified by Woodside, which includes matters relating to ethical business practices.
 - Reiterated Woodside does not request that Tuna Australia review the Master Existing Environment.
 - Notes Tuna Australia's position that it will only consult under a fee-for-service agreement.
 - Notes Tuna Australia's fees have increased.
 - Will continue to consult Tuna Australia as relevant and appropriate as required in the development of Environment Plans.

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- On 5 April 2024, Tuna Australia replied via email and noted that it:
 - Disagrees with Woodside’s assessment that Tuna Australia has been unwilling to make revisions to the agreement.
 - Believes Woodside has not demonstrated any attempt to create a collaborative working environment.
 - Remains committed to establishing a working relationship with Woodside.
 - Has reviewed Woodside’s proposed edits and requirements and provided changes to these. These changes were summarised in the email and implemented in an attached edited agreement. Specifically, Tuna Australia:
 - Agree with the ethical business practices sections.
 - Accepted changes to definitions and routine amendments like time and date formats.
 - Removed references to annual changes to the Master Existing Environment and noted it is open to updating certain outputs.
 - Apologised for its modest fee increase due to cost-of-living pressures.
 - Emphasised that through this draft, Tuna Australia demonstrates it is willing to negotiate the terms of its agreement.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>Tuna Australia advised:</p> <ul style="list-style-type: none"> • it had no objections to proposed activities, as its members did not currently undertake fishing in the areas identified in the activity overview. • several members were pursuing joint venture fishing arrangements to work these fishing grounds. • it was assisting a WTBF fisher to access licences and quota to commence fishing activities from Exmouth. • the Leeuwin current was an important fauna distribution feature, including the WTBF. <p>Tuna Australia provided Woodside its position statement for engaging with energy companies seeking consultation advice from stakeholders on environmental plans and project proposals. The position statement requests that where there is the potential for the proposed activity to impact Tuna Australia’s functions, interests or activities or that of its members, there is a need for a service agreement to be executed.</p>	<p>Woodside responded to Tuna Australia as follows:</p> <p>The fishery management area for the Western Tuna and Billfish Fishery, which Tuna Australia represents, overlaps the infrastructure proposed to be left <i>in situ</i> and the EMBA. However, there is considered to be no potential for interaction within these areas as:</p> <ul style="list-style-type: none"> • no recent fishing effort has occurred within or nearby to the Operational Area. • Fishery Status Report 2022 indicates current fishing effort is concentrated between Carnarvon and Albany and did not occur within the EMBA in the last five years (2016–2021) (<i>Patterson et al., 2022</i>). • Woodside acknowledges previous feedback received from Tuna Australia with respect to separate EPs. Woodside confirms that it has conducted a decommissioning options assessment including evaluating impact and risk assessments for leaving infrastructure <i>in situ</i> in order to identify and manage environmental impacts and risks, which includes potential interaction with recreational and commercial fishers. <p>To manage potential interactions, Woodside has the following controls in place regarding this EP:</p> <ul style="list-style-type: none"> • Woodside will notify AHO that the DTM anchors, suction piles and wellhead will be left <i>in situ</i> so they can continue to be marked on navigation charts. • Woodside will notify relevant State and Commonwealth fisheries of the disconnectable turret mooring (DTM) anchors, suction piles and wellhead location and that they will remain <i>in situ</i> for perpetuity. <p>Woodside notes Tuna Australia’s position regarding the use of industry data and its claim that a services agreement is required for it to co-ordinate or support consultation with relevant licence holders.</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 5.6.2 of this EP.</p> <p>Woodside will notify relevant State and Commonwealth fisheries of infrastructure remaining <i>in situ</i> (Western Deepwater Trawl Fishery) as per PS 1.3 of this EP.</p> <p>Woodside considers the measures and controls described within this EP address the potential impact from the proposed activities on Tuna Australia’s functions, interests or activities.</p> <p>No additional measures or controls are required.</p>

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<p>Unrelated to this EP, Tuna Australia has reiterated that it will not coordinate or support consultation with licence holders without a service agreement with Woodside. It believes Woodside has been provided permit register contact details in error and stated it was following up on the use of industry data with AFMA.</p> <p>Tuna Australia did not accept Woodside's proposed fee for its services was sufficient and later advised of an increased fee.</p> <p>Tuna Australia provides ongoing comments to develop a potential service agreement.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>Woodside reiterated to Tuna Australia a willingness to have a working relationship however noted it did not need to enter a fee-for-service agreement to meet Environment Plan consultation requirements.</p> <p>Woodside has provided consultation information to AFMA, DAFF - Fisheries, CFA, ASBTIA, Tuna Australia, WAFIC and individual relevant licence holders.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p> <p>Woodside will continue to consult Tuna Australia and Commonwealth licence holders for proposed activities where relevant and as appropriate. Consultation is voluntary and Tuna Australia can decide whether it wishes to engage in the process or not.</p> <p>Woodside notes that engagement on this EP was part of broader consultation on the decommissioning of the Stybarrow field. There is no proposed activity associated with this EP.</p>	
<p>Pearl Producers Association (PPA)</p>		
<p>Summary of consultation provided and responses:</p> <ul style="list-style-type: none"> On 16 February 2023, Woodside emailed PPA advising of the proposed activity (Appendix F, reference 2.2) and provided a Consultation Information Sheet. On 10 March 2023, Woodside sent a reminder email to PPA advising of the proposed activity (Appendix F, reference 3.6) and provided a Consultation Information Sheet. 		
<p>Summary of Feedback, Objection or Claim</p>	<p>Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response</p>	<p>Inclusion in Environment Plan</p>
<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside has provided consultation information to AFMA, DAFF - Fisheries, CFA, ASBTIA, Tuna Australia, WAFIC and individual relevant licence holders.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 5.6.2 of this EP.</p> <p>Woodside will notify relevant State and Commonwealth fisheries of infrastructure remaining <i>in situ</i> (Western Deepwater Trawl Fishery) as per PS 1.3 of this EP.</p>

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		No additional measures or controls are required.
State Commercial fisheries and representative bodies		
Western Australian Fishing Industry Council (WAFIC)		
<p>Woodside considers it has discharged its obligations under regulation 25 of the Environment Regulations by providing consultation materials and conducting various forms of engagement as set out in Section 6.4.1, Section 6.9 and below.</p>		
<p>Summary of information provided and record of consultation:</p>		
<ul style="list-style-type: none"> • On 27 May 2022, Woodside emailed WAFIC and provided the Stybarrow P&A and Decommissioning Environment Plans Fact Sheet (Appendix F, reference 1.8). • On 4 July 2022, WAFIC responded to Woodside seeking responses to the following questions and requests: <ul style="list-style-type: none"> ○ What material is contained in the suction gravity bases for the riser holdbacks and water injection manifold? ○ What does it mean to have riser bases 4 m in diameter and 7 m high left <i>in situ</i>? ○ Provide further detail of the assessment. • On 28 July 2022, Woodside responded to WAFIC and: <ul style="list-style-type: none"> ○ Provided details on the composition of the suction gravity bases of mild steel and epoxy-based paint on the top sections. ○ Confirmed that recent remotely operated vehicle (ROV) footage showed that approximately 0.75 m of the suction gravity bases was protruding from the seabed. ○ Provided a summary of the decommissioning assessment options and criteria, and high-level outcomes. ○ Woodside also advised that, since consultation material was provided to stakeholders, an historical exploration wellhead (Eskdale-1) within the field has been identified and added to the leave <i>in situ</i> scope. Woodside provided details on the dimensions and composition of the wellhead, including previous unsuccessful efforts to remove the wellhead in 2003 when the well was plugged and abandoned. • On 29 August 2022, WAFIC emailed Woodside thanking it for the updated information and requested further information unrelated to this EP. <ul style="list-style-type: none"> ○ For this EP, advised that WAFIC objects to the suction gravity bases or the disconnectable turret mooring and/or any equipment that has an epoxy-based paint remaining <i>in situ</i>. ○ Requested Woodside also provide details as to why the Eskdale-1 will remain <i>in situ</i>. • On 16 February 2023, Woodside emailed WAFIC advising of the proposed activity (Appendix F, reference 2.6) and provided a Consultation Information Sheet. • On 10 March 2023, Woodside sent a reminder email to WAFIC advising of the proposed activity (Appendix F, reference 3.9) and provided a Consultation Information Sheet. • On 5 May 2023, Woodside had a phone call with WAFIC to follow up on a number of EPs, including the activities proposed under this EP, and to request any further feedback. Woodside committed to providing WAFIC with a consolidated email outlining all the EPs Woodside is currently consulting WAFIC on for ease of feedback. • On 5 May 2023, Woodside sent an email to WAFIC providing the status of feedback on a number of EPs, including the activities proposed under this EP. Woodside advised it would soon be submitting the EP for assessment and requested any further feedback. • On 19 May 2023, Woodside had a phone call with WAFIC to follow up on a number of EPs, including the this EP and to request any feedback. • On 20 June 2023, Woodside emailed WAFIC advising the fisheries it had assessed as having a potential for interaction in the Operational Area and EMBA for a number of EPs, including the activities proposed under this EP. Woodside re-provided the Consultation Information Sheet and followed up on any further feedback with respect to the proposed EP. • On 27 June 2023, Woodside emailed WAFIC providing a response to feedback on a separate EP and followed up on feedback with respect to the activities proposed under this EP. • On 25 July 2023, WAFIC's CEO sent a letter to Woodside's CEO to register significant frustration with regard to Woodside pursuing detailed responses to EPs or Decommissioning Proposals. WAFIC noted: 		

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- Since start of 2023, it had received more than 60 emails seeking feedback for activities proposed by Woodside;
- Each email placed significant workload pressures on WAFIC, an organisation without sufficient resources to meet the deadlines required;
- It had a number of other oil and gas titleholders operating in WA waters seeking similar feedback for their projects;
- WAFIC requested Woodside to review its current consultation methodology for engagement with WAFIC.
- On 16 August 2023, Woodside emailed WAFIC and confirmed a meeting for 28 August 2023. Woodside also provided an outline of existing EP consultation and upcoming in the coming weeks which were not relevant to this EP.
- On 25 August 2023, Woodside's Executive Vice President replied to the letter from WAFIC CEO and noted:
 - Woodside's consultation is designed to ensure that relevant persons are identified and given sufficient information and a reasonable period to make an informed assessment of the possible consequences of the proposed activity.
 - Woodside is keen to meet with WAFIC and to ensure Woodside's consultation with WAFIC and the commercial fishing sector achieves this outcome.
 - Woodside thanked WAFIC for sharing concerns and appreciated the opportunity to discuss these matters further and will be in touch to organise a suitable meeting date.
- On 28 August 2023, Woodside met with WAFIC to discuss consultation on Environment Plans:
 - WAFIC noted the high level of consultation currently being experienced and resourcing requirements. It noted it needed to prioritise consultation and had provided guidance to offshore proponents.
 - Woodside discussed relevant persons consultation and acknowledged the high level of consultation to meet regulatory requirements and case law.
 - WAFIC noted the importance of genuine consultation and building a relationship with the commercial fishing sector.
 - Woodside sought to understand the most appropriate way to consult the commercial fishery sector.
 - WAFIC and Woodside agreed a more strategic approach to consultation was required, noting the WAFIC fee for service model.
 - Woodside recognised the need for WAFIC to be appropriately resourced to consider consultation materials.
 - It was noted it is challenging to make assumptions about certain offshore activities, for example considering water depth or distance from shore, to reduce consultation fatigue.
 - Pipeline installation, seismic and decommissioning are activities of the most interest to the commercial fishing sector.
 - WAFIC noted consultation at the Offshore Project Proposal stage was effective in understanding projects and upcoming work scopes.
 - Woodside and WAFIC agreed to identify a more strategic and tailored model to consult the commercial fishery sector.
 - Woodside gave a presentation on Environment Plan activities, consultation requirements, the environment that may be affected, and consultation on another EP.
- On 18 December 2023, Woodside responded to WAFIC email (related to this EP) dated 29 August 2022 as follows:
 - Apologised for the delayed response
 - Explained the Eskdale-1 wellhead was plugged and abandoned in 2003 and two unsuccessful attempts were made with the drill rig to remove the wellhead:
 - Given the technical difficulty of removing the wellhead at 800 m water depth, the isolated nature of the wellhead, and the absence of contemporary and historical trawl fishing in the vicinity of the wellhead, Woodside considers leaving the wellhead *in situ* is appropriate.
 - Noted WAFIC's concern with epoxy paint coating in particular the suction gravity bases and disconnectable turret mooring (DTM) anchors. The detachable turret mooring (DTM) will be completely removed, with no part left *in situ*. The suction gravity bases are partially coated with yellow epoxy paint approximately 450 microns thick.
 - Advised that Woodside had considered the environment impacts of the degradation of epoxy paint. It was deemed that leaving the suction bases *in situ* was a better environmental outcome than full removal.
 - Provided pictures of a suction pile prior to installation and embedded in the seabed during a post-cessation inspection.

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- Explained leaving suction piles *in situ* yields a better environmental outcome than full removal as:
 - Removal is technically challenging given the size and weight of the suction gravity bases
 - Removal will substantially disturb the seabed and associated biological communities around the suction gravity bases
 - The seabed around the suction gravity bases is depositional with very little sediment movement, resulting in additional burial over time which will limit the biological availability of degradation products
 - Degradation will require hundreds of years due to the corrosion protection provided by the epoxy and sacrificial anodes.
- On 20 December 2023, WAFIC responded thanking Woodside for its additional information on this and other decommissioning EPs. WAFIC:
 - Expressed support for the complete removal of the DTM.
 - Requested confirmation on the plan for DTM anchors.
 - Reiterated WAFIC’s stance in 29 August 2022 email regarding gravity bases and epoxy-based paint.
 - Acknowledged Woodside’s consideration and assessment of the impacts.
- On 21 December 2023, Woodside responded to WAFIC:
 - Confirming it had submitted an EP (Stybarrow Decommissioning and Field Management) proposing the full removal of the DTM including moorings.
 - Advising it is proposed the nine buried drag anchors will remain *in situ* as part of this EP.
 - Explaining each anchor is made of steel with an epoxy coating and is completely buried. As each anchor is securely embedded in the seabed removal is expected to result in substantial seabed disturbance.
 - Acknowledging WAFIC’s response that it maintains its claim regarding no equipment with epoxy-based paint remain *in situ* however acknowledged Woodside’s consideration and assessment of environmental impacts of the degradation in this EP.
- On 21 December 2023, WAFIC responded to Woodside:
 - Thanking Woodside for confirming the DTM mooring and anchor end states.
 - Advising at this stage WAFIC had no further comments regarding the proposed activities.
 - Looking forward to continuing to work together in 2024.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>WAFIC requested further information including:</p> <ul style="list-style-type: none"> ● material contained in the suction gravity bases ● what it means to leave riser bases <i>in situ</i> ● detail of the decommissioning assessment options ● explanation on why the wellhead will remain <i>in situ</i>. <p>WAFIC objects to the suction gravity bases or any equipment that has an epoxy-based paint to remain <i>in situ</i>.</p>	<p>Woodside responded to WAFIC’s requests:</p> <ul style="list-style-type: none"> ● confirming the composition of the suction gravity bases ● advising suction gravity bases were protruding 0.75 m above the seabed ● providing the decommissioning assessment options, criteria and high-level outcomes. <p>Woodside further responded advising:</p> <ul style="list-style-type: none"> ● after two successful attempts to remove the wellhead and given technical difficulty, isolated nature of the wellhead and absence of trawl fishing in the location, it was determined as appropriate to leave the wellhead <i>in situ</i>. 	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 5.6.2 of this EP.</p> <p>Woodside will notify relevant State and Commonwealth fisheries of infrastructure remaining <i>in situ</i> (Western Deepwater Trawl Fishery) as per PS 1.3 of this EP.</p> <p>Woodside considers the measures and controls described within this EP address the potential impact from the petroleum activity</p>

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<p>WAFIC acknowledged Woodside's consideration and assessment of environment impacts of the degradation of equipment left <i>in situ</i>. WAFIC confirmed it had no further comments regarding the proposed activities.</p>	<ul style="list-style-type: none"> the suction gravity bases are partially covered in epoxy paint coating. Removal of the bases will disturb the seabed and degradation will require hundreds of years due to the corrosion protection provided by the epoxy and sacrificial anodes. each anchor will remain <i>in situ</i> as they are securely embedded in the seabed and removal is expected to result in substantial seabed disturbance. <p>Woodside has provided consultation information to DPIRD, WAFIC and individual relevant licence holders.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p>	<p>on WAFIC's functions, interests or activities.</p> <p>No additional measures or controls are required.</p>
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Local government and community representative groups or organisations

Shire of Ashburton

<p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 17 February 2023, Woodside emailed Shire of Ashburton advising of the proposed activity (Appendix F, reference 2.20) and provided a Consultation Information Sheet. On 2 March 2023, Woodside met with Shire of Ashburton and discussed Environment Plans and consultation including the activities proposed under this EP. No concerns or questions were raised about the proposed activity. On 8 May 2023, Woodside attended an Onslow Community Information Night hosted by the Shire of Ashburton and presented on decommissioning activities. There were no questions raised about the proposed activity.

Stybarrow End State Decommissioning Environment Plan

- On 7 August 2023, Woodside emailed Shire of Ashburton on a variety of matters/query responses (for other EPs) including organising an opportunity to brief the Shire's Local and District Emergency Management Committee (LEMC) on its approach to managing a hydrocarbon release in the highly unlikely event this occurs. This is unrelated to this EP.
- On 14 August 2023, Shire of Ashburton emailed Woodside thanking it for its response which was deemed sufficient and invited Woodside to present at the Shire's December community information sessions. It was also suggested that for more regular information sharing, Woodside could submit articles to the *Onslow Pipeline*.
- On 26 September 2023, Woodside emailed Shire of Ashburton asking when the Shire's next LEMC meeting would be held.
- On 26 September 2023, Shire of Ashburton responded with the next LEMC meeting date and shared contact details for Woodside to be added to the invitation list.
- On 26 September 2023, Woodside emailed Shire of Ashburton with a list of desired meeting attendees and confirmed the start time.
- On 26 September 2023, Shire of Ashburton responded with a Teams link invitation and confirmed contact details for Woodside's requested attendees. The Shire advised it would confirm the exact presentation time closer to the meeting date.
- On 17 October 2023, Shire of Ashburton and Woodside exchanged further emails confirming presentation start time and attendee details.
- On 21 November 2023, Woodside presented at the Shire of Ashburton LEMC meeting and provided:
 - An overview of proposed activities relevant to the Shire including this EP;
 - An outline of the consultation approach and explanation of the EMBA as a modelling process of the broadest spatial extent an unplanned hydrocarbon release could spread based on a number of conditions;
 - Shire of Ashburton thanked Woodside for presenting to the committee and no questions or concerns were raised.
- On 27 November 2023, Woodside emailed the Shire of Ashburton with contact details, as per meeting action.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>Shire of Ashburton met with Woodside and attended a presentation on decommissioning activities. No concerns or questions were raised about the proposed activity.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>Woodside notes that no concerns or objections were raised with respect to the proposed EP.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p>	<p>Woodside considers the measures and controls described within this EP address the potential impact from the petroleum activity on the Shire of Ashburton's functions, interests or activities.</p> <p>No additional measures or controls are required.</p>

Shire of Exmouth

Summary of information provided and record of consultation:

- On 27 May 2022, Woodside emailed Shire of Exmouth and provided the Stybarrow P&A and Decommissioning Environment Plans Fact Sheet (Appendix F, reference 1.21).
- On 17 February 2023, Woodside emailed Shire of Exmouth advising of the proposed activity (Appendix F, reference 2.19) and provided a Consultation Information Sheet.
- On 10 March 2023, Woodside sent a reminder email to Shire of Exmouth advising of the proposed activity (Appendix F, reference 3.23) and provided a Consultation Information Sheet.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan

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Stybarrow End State Decommissioning Environment Plan

No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).	No additional measures or controls are required.
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<p>Exmouth Community Liaison Group (CLG) (formerly Exmouth Community Reference Group)</p> <ul style="list-style-type: none"> • Base Marine • Bgahwan Marine • Cape Conservation Group Inc. • DBCA • Department of Defence • Department of Transport • Exmouth Bus Charter • Exmouth Chamber of Commerce and Industry • Exmouth District High School • Exmouth Freight and Logistics • Exmouth Game Fishing Club • Exmouth Tackle and Camping Supplies • Exmouth Visitors Centre • Exmouth Volunteer Marine Rescue • Fat Marine • Gascoyne Development Commission • Gun Marine Services • Ningaloo Lodge • Offshore Unlimited • Shire of Exmouth • BHP Petroleum • Santos • Community Member

<p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 27 May 2022, Woodside emailed Exmouth CLG and provided the Stybarrow P&A and Decommissioning Environment Plans Fact Sheet (Appendix F, reference 1.22). • On 21 September 2022, Woodside presented to the Exmouth CLG on a number of activities, including the activities proposed under this EP (Appendix F, reference 1.26). • On 16 February 2023, Woodside emailed the Exmouth CLG advising of the proposed activity (Appendix F, reference 2.16) and provided a Consultation Information Sheet.

Stybarrow End State Decommissioning Environment Plan

- On 10 March 2023, Woodside sent a reminder email to the Exmouth CLG advising of the proposed activity (Appendix F, reference 3.17) and provided a Consultation Information Sheet.
- On 27 July 2023, Woodside attended an Exmouth Community Liaison Group meeting and acknowledged the increased volume of consultation material being sent. Woodside recapped on EPs that the Exmouth CLG had recently been consulted on including this EP. No feedback was received for this EP.
- On 21 November 2023, Woodside attended the Exmouth Community Liaison Group meeting, providing updates on specific unrelated EPs, presented a slide on the EPs the CLG had been previously consulted on, including this EP, and again acknowledged the increased volume of consultation material the CLG members had been receiving. No feedback was received for this EP.
- On 4 December 2023, Woodside's presentation was emailed to the CLG members, regardless of their attendance at the meeting.
- On 6 March 2024, Woodside presented to the Exmouth CLG on Woodside activities. Woodside presented a slide that listed Environment Plans on which the CLG members had recently been consulted and Environment Plans currently under consultation. No feedback was provided on this EP.
- 12 individuals attended the meeting representing:
 - Exmouth Volunteer Marine Rescue
 - Gascoyne Development Commission
 - Shire of Exmouth
 - PHI Helicopters
 - Exmouth Freight and Logistics
 - Exmouth Chamber of Commerce and Industry
 - Ningaloo Coast World Heritage Advisory Council
 - WA Country Health Service
 - Santos
- On 2 April 2024, Woodside's presentation was emailed to all of the CLG members, regardless of their attendance at the meeting.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).	No additional measures or controls are required.

Other non-government groups or organisations

Australian Conservation Foundation (ACF)

Summary of information provided and record of consultation:

- On 16 February 2023, Woodside emailed ACF advising of the proposed activity (Appendix F, reference 2.5) and provided a Consultation Information Sheet.
- On 10 March 2023, Woodside sent a reminder email to ACF advising of the proposed activity (Appendix F, reference 3.8) and provided a Consultation Information Sheet.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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Stybarrow End State Decommissioning Environment Plan

No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).	No additional measures or controls are required.
Conservation Council of Western Australia (CCWA)		
Summary of information provided and record of consultation:		
<ul style="list-style-type: none"> On 16 February 2023, Woodside emailed CCWA advising of the proposed activity (Appendix F, reference 2.4) and provided a Consultation Information Sheet. On 10 March 2023, Woodside sent a reminder email to CCWA advising of the proposed activity (Appendix F, reference 3.7) and provided a Consultation Information Sheet. 		
Summary of Feedback, Objection or Claim	Summary of Feedback, Objection or Claim	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).	No additional measures or controls are required.
Greenpeace Australia Pacific (GAP)		
Summary of information provided and record of consultation:		
<ul style="list-style-type: none"> On 2 June 2023, Woodside emailed GAP advising of the proposed activity and provided a Consultation Information Sheet (Appendix 2.31). On 23 June 2023, Woodside sent a reminder email to GAP advising of the proposed activity (Appendix F, reference 3.27) and provided a Consultation Information Sheet. 		
Summary of Feedback, Objection or Claim	Summary of Feedback, Objection or Claim	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).	No additional measures or controls are required.
Research institutes and local conservation groups or organisations		
Cape Conservation Group (CCG)		
Summary of information provided and record of consultation:		
<ul style="list-style-type: none"> On 27 May 2022, Woodside emailed CCG and provided the Stybarrow P&A and Decommissioning Environment Plans Fact Sheet (Appendix F, reference 1.25). On 17 February 2023, Woodside emailed the CCG advising of the proposed activity (Appendix F, reference 2.17) and provided a Consultation Information Sheet. On 10 March 2023, Woodside sent a reminder email to CCG advising of the proposed activity (Appendix F, reference 3.18) and provided a Consultation Information Sheet. On 14 March 2023, CCG responded to Woodside highlighting matters unrelated to this EP as well as: <ul style="list-style-type: none"> NOPSEMA and Regulators deny approval to Environmental Plans that include intentional petroleum releases. Woodside be held accountable for failing to maintain infrastructure during and after the use/decommissioning of a field, as well as environmental and social damage caused by its industrial activities. 		

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Stybarrow End State Decommissioning Environment Plan

- The use of CSV working in shallow waters increases risk.
- NOPSEMA require the mandated use of an HLV to mitigate this risk.
- CCG further submits that:
 - No more delay or environmental damage from Stybarrow can be tolerated.
 - Due to previous Woodside consultations being unsatisfactory, CCG efforts in this space will be directed towards the regulators, government and media.
- On 24 May 2023, Woodside responded thanking the CCG for its letter with respect to a number of EPs, including the activities proposed under this EP. Woodside advised:
 - All current and proposed field management and decommissioning activities will be undertaken in accordance with relevant accepted EPs under NOPSEMA's regulatory jurisdiction.
 - Impacts and risks associated with these activities will be reduced to a level that is As Low As Reasonably Practicable (ALARP) and acceptable to the satisfaction of NOPSEMA.
 - The proposed EP does not have vessel-based activities associated with its scope and therefore does not present a credible spill risk or marine noise risk.
 - Woodside is committed to completing the decommissioning of the Stybarrow field. Woodside is executing several decommissioning projects and is on track to meet it plans and any regulatory requirements stipulated by the regulator through general directions. Woodside continues to work with the regulator to progress its decommissioning commitment.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>CCG responded to Woodside and submitted that Woodside be held accountable for failing to maintain infrastructure during and after the use/decommissioning of a field, as well as environmental and social damage caused by its industrial activities.</p>	<p>Woodside responded advising:</p> <ul style="list-style-type: none"> ● All current and proposed field management and decommissioning activities will be undertaken in accordance with relevant accepted EPs under NOPSEMA's regulatory jurisdiction. ● Impacts and risks associated with these activities will be reduced to a level that is ALARP and acceptable to the satisfaction of NOPSEMA. ● The proposed EP does not have vessel-based activities associated with its scope and therefore does not present a credible spill risk or marine noise risk. <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).</p>	<p>Woodside has consulted CCG in the course of preparing this EP. Woodside has assessed the claims or objections raised by CCG. No additional measures or controls have been put in place.</p> <p>Woodside considers the measures and controls described within this EP address the potential impact from the petroleum activity on CCG's functions, interests or activities.</p>

Protect Ningaloo

- Summary of information provided and record of consultation:**
- On 17 February 2023, Woodside emailed Protect Ningaloo advising of the proposed activity (Appendix F, reference 2.18) and provided a Consultation Information Sheet.
 - On 10 March 2023, Woodside sent a reminder email to Protect Ningaloo advising of the proposed activity (Appendix F, reference 3.5) and provided a Consultation Information Sheet.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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Stybarrow End State Decommissioning Environment Plan

No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).	No additional measures or controls are required.
University of Western Australia (UWA)		
Summary of information provided and record of consultation:		
<ul style="list-style-type: none"> On 21 February 2023, Woodside emailed UWA advising of the proposed activity (Appendix F, reference 2.21) and provided a Consultation Information Sheet. On 10 March 2023, Woodside sent a reminder email to the UWA advising of the proposed activity (Appendix F, reference 3.4) and provided a Consultation Information Sheet. 		
Summary of Feedback, Objection or Claim	Summary of Feedback, Objection or Claim	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.5).	No additional measures or controls are required.
Western Australian Marine Science Institution (WAMSI)		
Summary of information provided and record of consultation:		
<ul style="list-style-type: none"> On 21 February 2023, Woodside emailed WAMSI advising of the proposed activity (Appendix F, reference 2.22) and provided a Consultation Information Sheet. On 10 March 2023, Woodside sent a reminder email to WAMSI advising of the proposed activity (Appendix F, reference 3.3) and provided a Consultation Information Sheet. 		
Summary of Feedback, Objection or Claim	Summary of Feedback, Objection or Claim	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.3.5).	No additional measures or controls are required.
Commonwealth Scientific and Industrial Research Organisation (CSIRO)		
Summary of information provided and record of consultation:		
<ul style="list-style-type: none"> On 21 February 2023, Woodside emailed CSIRO advising of the proposed activity (Appendix F, reference 2.27) and provided a Consultation Information Sheet. On 21 February 2023, CSIRO sent an automated email acknowledging receipt of the email and provided an enquiry reference number. On 4 June 2023, Woodside sent a reminder email to CSIRO advising of the proposed activity (Appendix F, reference 3.21). 		
Summary of Feedback, Objection or Claim	Summary of Feedback, Objection or Claim	Inclusion in Environment Plan
CSIRO responded with an automated email acknowledging receipt of the email.	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	No additional measures or controls are required.

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Stybarrow End State Decommissioning Environment Plan

Whilst feedback has been received, there were no objections or claims.	received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 10.5).	
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1. Initial Consultation (27 May 2022)

1.1 Consultation Information Sheet sent to relevant persons

Petroleum



Invitation for Feedback: Stakeholder Information Fact Sheet



Stybarrow Plug & Abandonment and Decommissioning Environment Plans

Northern Carnarvon Basin, North West Australia

BHP Billiton Petroleum Pty Ltd (BHP) is planning to undertake subsea decommissioning activities for the Stybarrow field which is located within Commonwealth waters in Production Licence WA-32-L, approximately 53 km north-west of Exmouth, Western Australia and in water depths of approximately 810-850 m (Figure 1).

The Stybarrow development was in production from 2007 until 2015 and consisted of the Stybarrow floating production, storage and offloading (FPSO) facility and its mooring, subsea facilities including 10 subsea wells (production and water/gas injectors), the associated trees, manifolds, risers, flowlines, and umbilicals, and the disconnectable turret mooring (DTM) buoy which connected the FPSO to the subsea infrastructure.

Decommissioning of the Stybarrow Field is planned to be undertaken in stages under relevant Commonwealth approvals, with regulatory approvals being sought for the following activities:

- Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, umbilicals and the DTM and its moorings);
- Ongoing field management activities, such as equipment inspection and monitoring;
- The plug and abandonment (P&A) of 10 production/injection wells;
- Removal of the H4 flowline; and
- Proposed leave *in situ* of the DTM anchors (buried) and suction gravity bases for the riser holdbacks and water injection manifold.

This Stakeholder Fact Sheet relates to the activities planned to be managed under two Environment Plans (EPs), these being for:

- The well P&A, H4 flowline removal activities, managed under the Stybarrow P&A Environment Plan (EP).
- The equipment proposed to remain *in situ*, managed under a separate Stybarrow Field Deviation EP.

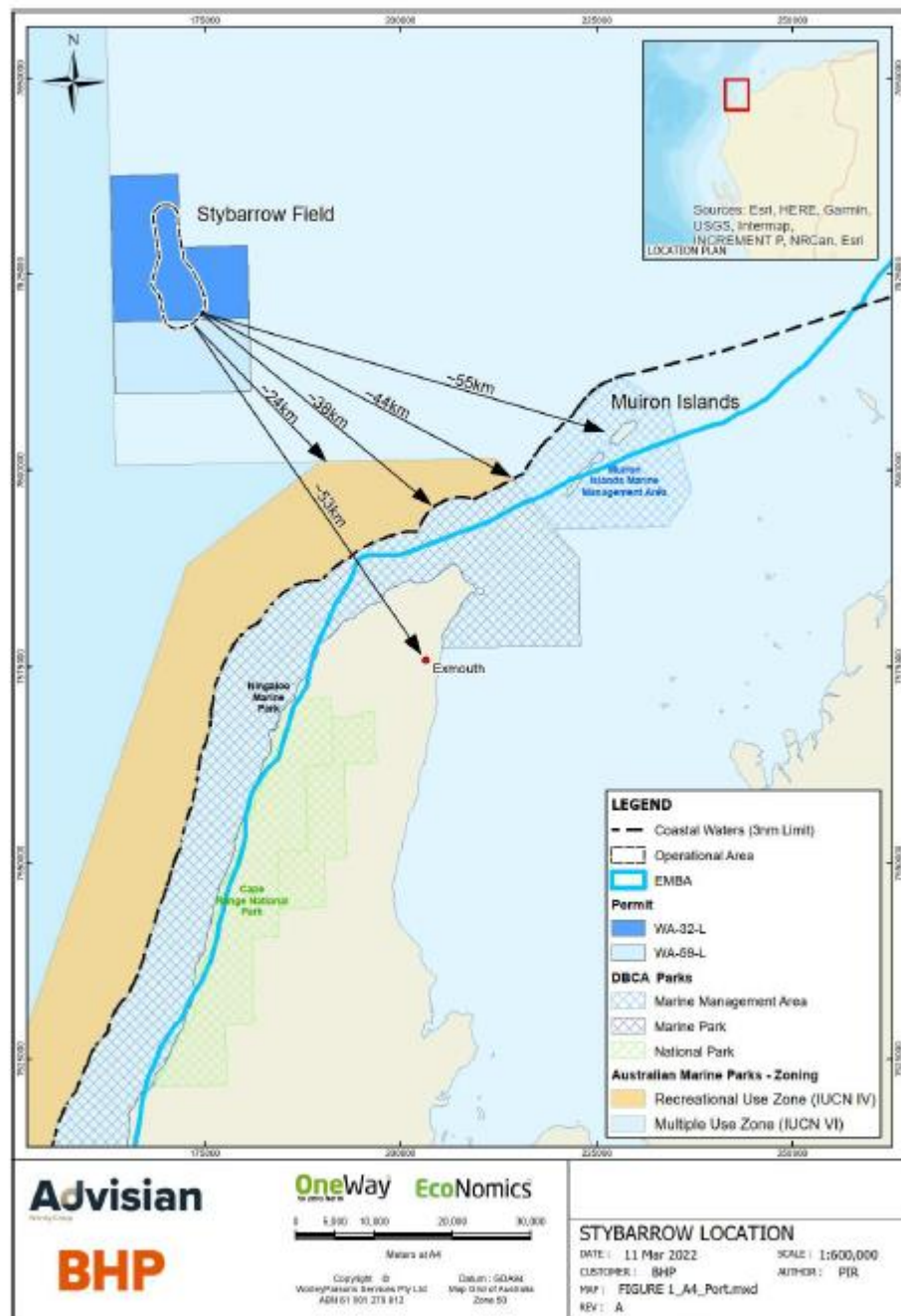
An EP for the subsea equipment removal and ongoing field management activities was submitted in April 2022 and is presently under assessment.

The well P&A and H4 flowline removal activities are planned to commence in 2024, pending approvals, vessel availability and weather constraints. BHP is preparing an EP for this activity for submission to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) under the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009. The EP is being written to allow the activity to occur at any time of year as schedules are subject to change and to allow our business flexibility. The P&A activities are required to be completed no later than 30 September 2024 and equipment removal completed no later than 31 March 2025.

BHP Billiton Petroleum (Australia) Pty Ltd is the designated operator on behalf of a joint venture comprising BHP Billiton Petroleum (Australia) Pty Ltd and Woodside Energy Ltd (Woodside), which are the holders of Production Licence WA-32-L.

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Figure 1 Stybarrow Location



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Location of Operational Area

The Operational Area defines the spatial boundary within which the proposed activities will take place (Figure 1 and

Figure 2). The Operational Area is temporary for the duration of activities and will comprise a 1,500 m radius around the wells and subsea infrastructure. The nearest point to mainland shore from the Operational Area is approximately 42 km (near the tip of North West Cape) and the closest major town is Exmouth, approximately 52 km to the south east. There are several Commonwealth and State Marine protected areas in the region, the closest being the Gascoyne Australian Marine Park in Commonwealth waters, which is approximately 5 km west of the Operational Area (Figure 1 and Table 1).

Table 1 Marine protected areas in the region

Value/ Sensitivity	Approx. Distance from Operational Area
Gascoyne Australian Marine Park (Commonwealth)	5 km
Ningaloo Australian Marine Park (Commonwealth)	24 km
Ningaloo Marine Park (Western Australia)	36 km
Muiron Islands Marine Management Area (Western Australia)	45 km

Description of Activity

Within the scope of EPs covered by this fact sheet, BHP proposes to:

- Plug and abandon the 10 Stybarrow development wells
- Remove the H4 flowline which was blocked due to a sanding event during production. BHP has assessed that the impact to the marine environment would be a release of up to 14m³ in the event that any hydrocarbons are released during recovery of the flowline.

At the conclusion of these activities, BHP is proposes that the following equipment will be left *in situ*:

- 9 DTM mooring anchors;
- 9 suction pile riser bases; and
- The suction pile foundation for the water injection manifold.

BHP has undertaken an environmental impact assessment of the feasible decommissioning options for the equipment proposed to be left *in situ*. This assessment concluded that leaving these items *in situ* was a better environmental outcome due to:

- the environmental damage caused by their removal, given they are deeply embedded in the seabed.
- the very low environmental risk associated with the degradation of equipment. The items are of steel construction and do not contain plastics or other known contaminants. The degradation products of steel are not considered toxic and these materials are routinely used in the construction of marinas, breakwaters etc.
- minimal impact to other users of the sea, due to the water depth (800m+)

The locations of the wellheads, H4 flowline and equipment proposed to be left *in situ* are provided in Table 3.

A detailed inventory of subsea infrastructure to be removed or left *in situ* under these activity scopes is included in the respective EPs, which will be available on NOPSEMA's website (<https://www.nopsema.gov.au/>) upon submission.

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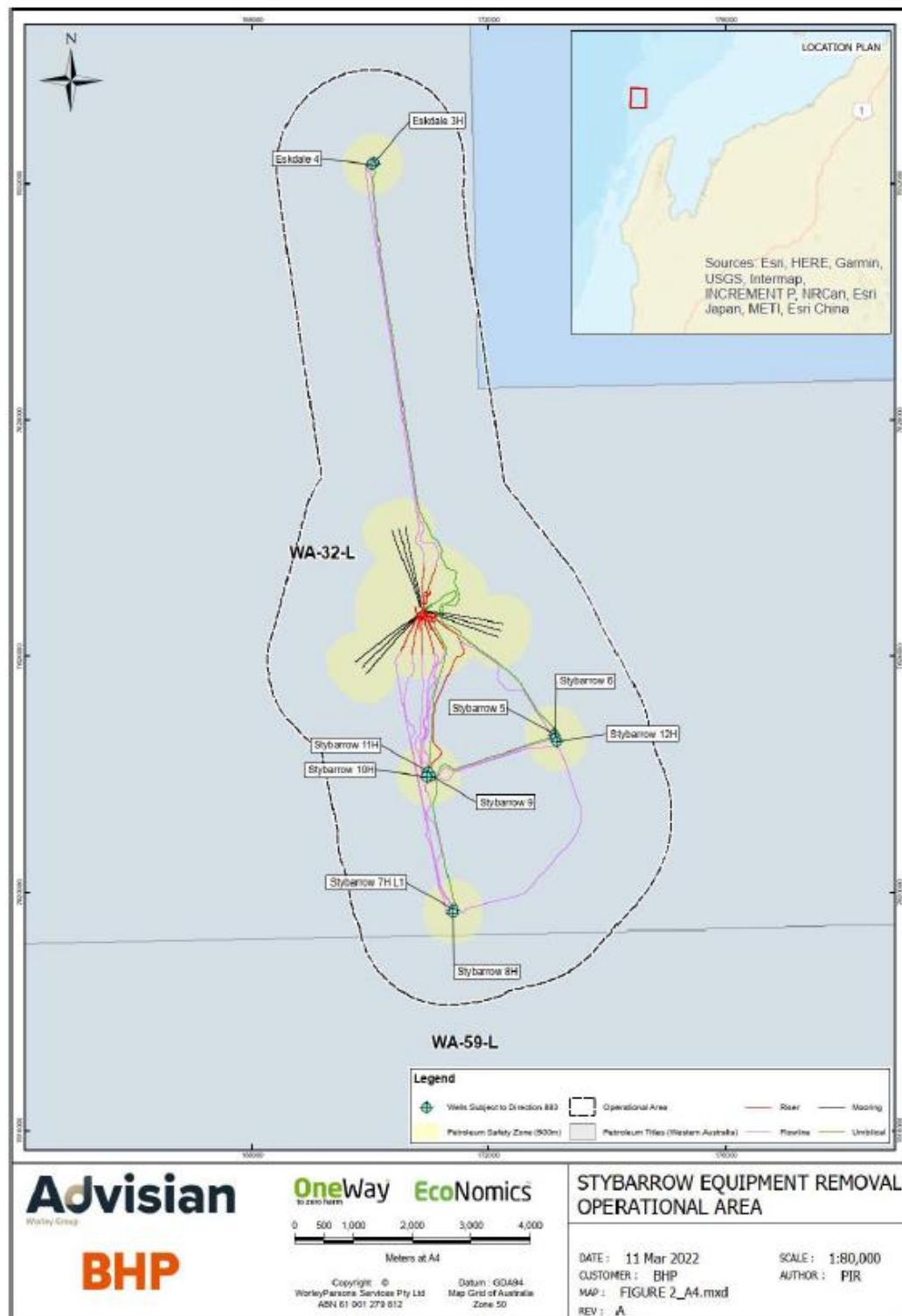


Figure 2 Equipment Removal Activity Operational Area

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Table 2 Summary of decommissioning activities

Stybarrow Subsea Infrastructure Decommissioning Activities	
Earliest expected commencement date	Earliest P&A start is 2024 calendar year, subject to approvals, MODU and vessel availability, and weather constraints. P&A must be completed no later than 30 September 2024.
Petroleum title	Production Licence WA-32-L
Operational area	A 500 m safety exclusion zone around the wells and a 1,500 m radius temporary Operational Area (precautionary) around the wells and subsea equipment for the duration of the activity.
Petroleum Safety Zones	500 m radius around wells 1,134 m radius around former FPSO location
Estimated duration	Approximately 6 months
Water depth	Approximately 810-850 m
Activities proposed	P&A of 10 wells Removal of 1 x flexible production flowline, ~2000m long
Vessels	Semi submersible mobile offshore drilling unit (MODU) (Dynamic positioning) Offshore support vessels, such as general support/supply vessels, construction support vessels/installation vessels. Typically, two (but up to six) project vessels will be in the Operational Area during well P&A and subsea infrastructure removal activities.

Table 3 Location of subsea infrastructure and activity. All coordinates in MGA50/GDA94

Subsea infrastructure	Easting	Northing	Activity
H4 flowline	Between H4 well and riser, approximately ~2000m in length		Remove. Flowline was blocked with sand/hydrocarbons/hydrate during production. Up to 14m ³ of hydrocarbons could potentially be released during its recovery (unplanned)
Eskdale-4 (EG1) Well	170024.53	7632318.26	Plug and abandon. Wellhead and subsea tree removal is covered under the Equipment Removal EP
Stybarrow-5 (I-3) Well	173119.00	7622683.90	
Stybarrow-6 (I-2) Well	173143.86	7622636.19	
Stybarrow-12 (H-5) Well	173172.80	7622560.74	
Stybarrow-9 (I-1) Well	171032.33	7621985.59	
Stybarrow-10 (H-3) Well	170958.06	7621964.06	
Stybarrow-11 (H-4) Well	170980.53	7622056.34	
Stybarrow-7 (H-2) Well	171413.34	7619728.58	
Stybarrow-8 (H-1) Well	171403.11	7619659.88	
Eskdale-3 (EH1) Well	170065.05	7632345.32	
Eskdale-4 (EG1) Well	170024.53	7632318.26	
Water injection manifold suction base	171486.5	7624333.0	Leave in Situ proposed (flush with seabed), 4m in diameter, 7m high
Mooring 1 Anchor	172172.4	7624323.5	Leave in Situ Proposed (buried) Anchors are 11 tonne Stevpris Mk5 Vryhof anchors, ~6m x 6m x 3m
Mooring 2 Anchor	172215.2	7624441.7	
Mooring 3 Anchor	172237.1	7624561.1	
Mooring 4 Anchor	170594.8	7626195	

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Subsea infrastructure	Easting	Northing	Activity
Mooring 5 Anchor	170489.2	7626161.1	Riser bases embedded in seabed – leave in situ proposed. Clamps and chains removed. Riser bases are 4m in diameter, 7m high.
Mooring 6 Anchor	170372.9	7626127.5	
Mooring 7 Anchor	169759.4	7623909.3	
Mooring 8 Anchor	169828.7	7623775.8	
Mooring 9 Anchor	169943.1	7623715.9	
Dynamic Umbilical Riser Base	171433.8	7625113.9	
Water Injection 10" Riser base	171491.8	7624359.1	
H4GL Gas Lift 6" Riser Base	171256.2	7624136.9	
EG1 Gas Injection 6" Riser Base	171121.0	7625533.9	
H4 Production 8" Riser Base	171080.4	7624061.0	
H3 Production 8" Riser Base	170894.3	7624028.6	
H2 Production 7" Riser Base	170704.2	7624040.9	
H1 Production 7" Riser Base	170526.5	7624100.2	
EH1 Production 6" Riser Base	170921.2	7625578.0	

Summary of potential risks and associated management measures

Potential risks and management measures associated with the activity have been considered and are summarised in Table 4.

Table 4 Potential risks and associated management measures

Potential Risks	Management and/or mitigation measures
Planned Activities	
Physical presence	<ul style="list-style-type: none"> BHP's existing infrastructure is marked on nautical charts. Establishment of a 500 m safety exclusion zone around the wells and a 1500 m Operational Area for the duration of the activity. Consultation with relevant stakeholders (e.g., adjacent petroleum titleholders, commercial fishers and their representative organisations, government departments and agencies and local communities) to inform decision making for the proposed activity and the development of the Environment Plan. BHP will notify relevant fishing industry representative organisations/associations and Government maritime safety agencies of the start and end dates for the activity, the MODU location and details of exclusion zones prior to commencement of the P&A and other removal activities.
Light emissions	<ul style="list-style-type: none"> Lighting is minimised to that required for safety and navigational purposes.
Noise Emissions	<ul style="list-style-type: none"> Measures will be in place for interacting with protected marine fauna as per the EPBC Regulations (Part 8) and consistent with relevant Conservation Management Plans Engines, compressors and machinery on the vessel are maintained via the vessel preventative maintenance system (PMS) to ensure equipment is operating efficiently.
Atmospheric emissions	<ul style="list-style-type: none"> Air emissions from marine engines meet MARPOL requirements and are routinely maintained. Marine-grade (low sulphur) diesel to be used.
Routine vessel discharges	<ul style="list-style-type: none"> Routine discharges and vessel waste treatment systems will meet legal / MARPOL requirements. No discharge of oily water exceeding 15 ppm oil in water content. Food-scrap macerated prior to discharge. Maintain biosecurity requirements such as anti-fouling certification, ballast water and biofouling controls.

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Potential Risks	Management and/or mitigation measures
	<ul style="list-style-type: none"> Chemical use will be managed in accordance with BHP and contractor chemical selection and approval procedures
Subsea discharges	<ul style="list-style-type: none"> Chemical use will be managed in accordance with BHP and contractor chemical selection and approval procedures. All routine marine discharges will be managed according to legislative and regulatory requirements and BHP's Environment Performance Standards where applicable.
Unplanned Risks	
Unplanned releases, including hydrocarbons	<ul style="list-style-type: none"> All personnel undertaking activities will undergo relevant inductions and training Procedures for lifts, equipment maintenance, inspections and bunding All offshore activities will be managed in accordance with lifting and transfer procedures Well barrier management shall be implemented, tested and monitored Recovery of solid wastes overboard where safe and practicable to do so Implementation of Oil Pollution Emergency Plan (OPEP). No heavy fuels used – only marine diesel oil (MDO). Appropriate vessel spill response plans, equipment and materials will be in place and maintained
Marine fauna interaction	<ul style="list-style-type: none"> Measures will be in place for interacting with protected marine fauna as per the Environment Protection Biodiversity Conservation (EPBC) Regulations (Part 8).
Introduced marine species	<ul style="list-style-type: none"> BHP contracted vessels comply with Australian biosecurity requirements and guidance, and Australian ballast water requirements. Vessels will be assessed and managed in line with BHP procedures to prevent the introduction of invasive marine species.
Vessel collision	<ul style="list-style-type: none"> Marine notifications will be made to relevant stakeholders, describing the location of the activity and exclusion/cautionary zones to prevent the risk of vessel collisions

Protecting Our People and the Environment

Safety of our people and the communities in which we operate always comes first. Identifying, controlling, and mitigating safety risks is managed through an overarching, consistent approach guided by BHP's Risk Management governance framework, with supporting processes and performance standards. All activities (routine and non-routine) will be performed in accordance with the industry-leading standards established in BHP's Charter, HSEC Framework and Controls, BHP's Wells and Seismic Delivery Management System, Engineering Standards and Procedures, the Environment Plan and the NOPSEMA-accepted Well Operations Management Plan (WOMP) and NOPSEMA-accepted Vessel Safety Case.

Offshore petroleum activities are regulated through a robust and comprehensive environmental protection regime administered by NOPSEMA under the Commonwealth *Offshore Petroleum and Greenhouse Gas Storage Act 2006*. BHP undertakes risk assessments for all environmental aspects of a petroleum activity and stringently adheres to the regulatory regime.

The objective of the Environment Plan is to ensure that potential adverse impacts on the environment associated with activities, during both routine and non-routine activities, are identified, and will be continuously reduced to as low as reasonably practicable (ALARP) and an acceptable level. BHP is committed to understanding the impacts of our activities on stakeholders with an interest in the Stybarrow field and seeks feedback as part of the development of the EP.

Responding to Emergencies

BHP's incident response plans are accepted by the regulator NOPSEMA. The Commonwealth Oil Pollution Emergency Plan (OPEP) is required by law under the Environmental Regulations and forms an appendix to the full EP. The OPEP outlines responsibilities, specific procedures and identifies resources available in the unlikely event of an oil pollution incident. BHP maintains a constant vigilance and readiness to prevent and/or respond to hydrocarbon loss of containment incidents. The readiness and competency of BHP to respond to incidents is maintained and tested by conducting activity-specific emergency response exercises.

Document number: 411012-00432-20000-REP-0001_Rev0 20220526

Should you have any questions, concerns or grievances regarding these activities or any other BHP Petroleum activities, please call BHP WA Community Hotline on **1800 421 077** or send an email to [**bhppetexternalaffairs@bhp.com**](mailto:bhppetexternalaffairs@bhp.com)

BHP believes in putting health and safety first, being environmentally responsible and supporting our communities.

1.2 Email sent to Australian Hydrographic Office (AHO) and Australian Maritime Safety Authority (AMSA) – Marine Safety (27 May 2022)

INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

Fri 5/27/2022 6:13 AM

To:amsaconnect@amsa.gov.au <amsaconnect@amsa.gov.au>;datacentre@hydro.gov.au <datacentre@hydro.gov.au>

Cc:BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

📎 1 attachments (691 KB)

Fact Sheet - Stybarrow P&A and Decommissioning Environment Plans.pdf;

Dear AMSA and AHO

BHP is planning for the next stage of its ongoing safe and sustainable closure of the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia.

Production from the Stybarrow Field commenced in 2007 and ceased in 2015. Since that time the following cessation activities have been completed:

- All flowlines and gas lift lines were flushed and filled with treated seawater and production flowlines disconnected (except for an abandoned flowline which was blocked by sand and gas hydrate during production, which is disconnected, sealed and lying on the seabed).
- All production, gas injection and water injection wells were shut in and capped.
- The Stybarrow Venture FPSO was disconnected from the DTM and departed from the field in August 2015.

BHP consulted stakeholders in March 2022 on the first phase of decommissioning, these being activities for the proposed removal of the Stybarrow subsea equipment and ongoing field management activities until the equipment is removed. Feedback from stakeholders was considered in planning the Stybarrow Equipment Removal Environment Plan (EP), which was submitted to National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) in April 2022 for assessment.

BHP is now seeking stakeholder feedback on well plug and abandonment (P&A) and decommissioning activities, which are proposed to be managed under two separate Environment Plans, these being:

- Stybarrow P&A EP
- Stybarrow Field Deviation EP

A summary of proposed activities to be managed under each EP follows and a fact sheet is attached providing more detail on infrastructure location and activity, as well as a summary of risks and associated management measures.

Activity Overview

Activities: Stybarrow P&A EP Stybarrow Field Deviation EP	<ul style="list-style-type: none"> • The P&A of 10 production/injection wells • Removal of the H4 flexible production flowline Proposed leave <i>in situ</i> : <ul style="list-style-type: none"> • The disconnectable turret mooring (DTM) anchors. Each anchor is buried, is approximately 6m x 6m x 3m, and weighs 11 tonnes. • Suction gravity bases for the riser holdbacks and water injection manifold. The riser bases embedded in the seabed, and clamps and chains will be removed. Riser bases are 4m in diameter and 7m high.
Petroleum title:	Production Licence WA-32-L
Activity location:	Approximately 53 km north-west of Exmouth, Western Australia
Infrastructure locations:	See attached Stakeholder Information Fact Sheet

Stybarrow End State Decommissioning Environment Plan

Approximate water depth:	Approximately 810-850 m
Estimate start date:	Earliest P&A start is 2024 calendar year, subject to approvals, MODU and vessel availability, and weather constraints. P&A must be completed no later than 30 September 2024.
Approximate duration:	Approximately 6 months
Vessels:	Semi submersible mobile offshore drilling unit (MODU) (Dynamic positioning) Offshore support vessels, such as general support/supply vessels, construction support vessels/installation vessels. Typically, two (but up to six) project vessels will be in the Operational Area during well P&A and subsea infrastructure removal activities.
Operational area:	A 500 m safety exclusion zone around the wells and a 1,500 m radius temporary Operational Area (precautionary) around the wells and subsea equipment for the duration of the activity.

Your Feedback

Your feedback on the proposed activity and our response will be provided to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), as is required under the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009.

As a relevant stakeholder you are invited to provide comments. The Environment Plan will contain a summary of all comments received. However, BHP will not use or disclose your personal information in the Environment Plan. Full transcripts of all correspondence will be included in a separate sensitive information part of the Environment Plan provided to NOPSEMA.

Please provide comment as soon as practicable. Comments can be made by email, letter or by phone (refer to attached Fact Sheet for contact details) by close of business on **24 June 2022**.

Regards,

BHP

1.3 Email sent to Australian Fisheries Management Authority (AFMA) (27 May 2022)

INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

Fri 5/27/2022 6:12 AM

To:petroleum@afma.gov.au <petroleum@afma.gov.au>

Cc:BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

📎 1 attachments (691 KB)

Fact Sheet - Stybarrow P&A and Decommissioning Environment Plans.pdf;

Dear stakeholder

BHP is planning for the next stage of its ongoing safe and sustainable closure of the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia.

Production from the Stybarrow Field commenced in 2007 and ceased in 2015. Since that time the following cessation activities have been completed:

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BHP consulted stakeholders in March 2022 on the first phase of decommissioning, these being activities for the proposed removal of the Stybarrow subsea equipment and ongoing field management activities until the equipment is removed. Feedback from stakeholders was considered in planning the Stybarrow Equipment Removal Environment Plan (EP), which was submitted to National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) in April 2022 for assessment.

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- Stybarrow P&A EP
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A summary of proposed activities to be managed under each EP follows and a fact sheet is attached providing more detail on infrastructure location and activity, as well as a summary of risks and associated management measures.

Activity Overview

Activities: Stybarrow P&A EP Stybarrow Field Deviation EP	<ul style="list-style-type: none"> • The P&A of 10 production/injection wells • Removal of the H4 flexible production flowline Proposed leave <i>in situ</i> : <ul style="list-style-type: none"> • The disconnectable turret mooring (DTM) anchors. Each anchor is buried, is approximately 6m x 6m x 3m, and weighs 11 tonnes. • Suction gravity bases for the riser holdbacks and water injection manifold. The riser bases embedded in the seabed, and clamps and chains will be removed. Riser bases are 4m in diameter and 7m high.
Petroleum title:	Production Licence WA-32-L
Activity location:	Approximately 53 km north-west of Exmouth, Western Australia
Infrastructure locations:	See attached Stakeholder Information Fact Sheet
Approximate water depth:	Approximately 810-850 m

Stybarrow End State Decommissioning Environment Plan

Estimate start date:	Earliest P&A start is 2024 calendar year, subject to approvals, MODU and vessel availability, and weather constraints. P&A must be completed no later than 30 September 2024.
Approximate duration:	Approximately 6 months
Vessels:	Semi submersible mobile offshore drilling unit (MODU) (Dynamic positioning) Offshore support vessels, such as general support/supply vessels, construction support vessels/installation vessels. Typically, two (but up to six) project vessels will be in the Operational Area during well P&A and subsea infrastructure removal activities.
Operational area:	A 500 m safety exclusion zone around the wells and a 1,500 m radius temporary Operational Area (precautionary) around the wells and subsea equipment for the duration of the activity.

Commercial Fishing Overview

Stybarrow End State Decommissioning Environment Plan

Commercial fisheries have been identified as being relevant to the proposed activities on the basis of fishing licence overlap with the proposed Operational (activity) Area, as well as consideration of fishing effort data, fishing methods and water depth.

Commonwealth fisheries

There are four overlapping Commonwealth fisheries, of which the Western Deepwater Trawl Fishery has been identified as relevant based on the identification criteria. BHP will consult representative organisations and licence holders entitled to fish in the Operational Area.

State fisheries

There are six overlapping State fisheries, of which the following fisheries have been identified as being relevant based on the identification criteria. Individual licence holders in these fisheries will be consulted.

- Mackerel Managed Fishery (Area 3)
- West Coast Deep Sea Crustacean Managed Fishery

The following government departments and organisations will also be consulted on behalf of licence holders entitled to fish in the Operational Area:

Commonwealth Fisheries:

- Australian Fisheries Management Authority
- Australian Southern Bluefin Tuna Industry Association on behalf of licence holders in the Southern Bluefin Tuna and Western Skipjack Tuna Fisheries
- Department of Agriculture, Water and the Environment
- Commonwealth Fisheries Association on behalf of licence holders in the Western Deepwater Trawl, Western Tuna and Billfish and Western Skipjack Tuna Fisheries
- Tuna Australia on behalf of licence holders in the Western Tuna and Billfish Fishery

State Fisheries and recreational fishing:

- Department of Primary Industry and Resources
- Western Australian Fishing Industry Council
- Pearl Producers Association
- Recfishwest

Your Feedback

Your feedback on the proposed activity and our response will be provided to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), as is required under the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009.

As a relevant stakeholder you are invited to provide comments. The Environment Plan will contain a summary of all comments received. However, BHP will not use or disclose your personal information in the Environment Plan. Full transcripts of all correspondence will be included in a separate sensitive information part of the Environment Plan provided to NOPSEMA.

Please provide comment as soon as practicable. Comments can be made by email, letter or by phone (refer to attached Fact Sheet for contact details) by close of business on **24 June 2022**.

Regards,

BHP

1.4 Email sent to Director of National Parks (DNP) (27 May 2022)

INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

Fri 5/27/2022 6:27 AM

To: marinereserves@environment.gov.au <marinereserves@environment.gov.au>

Cc: BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

📎 1 attachments (691 KB)

Fact Sheet - Stybarrow P&A and Decommissioning Environment Plans.pdf;

Dear Director of National Parks

BHP is planning for the next stage of its ongoing safe and sustainable closure of the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia.

Production from the Stybarrow Field commenced in 2007 and ceased in 2015. Since that time the following cessation activities have been completed:

- All flowlines and gas lift lines were flushed and filled with treated seawater and production flowlines disconnected (except for an abandoned flowline which was blocked by sand and gas hydrate during production, which is disconnected, sealed and lying on the seabed).
- All production, gas injection and water injection wells were shut in and capped.
- The Stybarrow Venture FPSO was disconnected from the DTM and departed from the field in August 2015.

BHP consulted stakeholders in March 2022 on the first phase of decommissioning, these being activities for the proposed removal of the Stybarrow subsea equipment and ongoing field management activities until the equipment is removed. Feedback from stakeholders was considered in planning the Stybarrow Equipment Removal Environment Plan (EP), which was submitted to National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) in April 2022 for assessment.

BHP is now seeking stakeholder feedback on well plug and abandonment (P&A) and decommissioning activities, which are proposed to be managed under two separate Environment Plans, these being:

- Stybarrow P&A EP
- Stybarrow Field Deviation EP

A summary of proposed activities to be managed under each EP follows and a fact sheet is attached providing more detail on infrastructure location and activity, as well as a summary of risks and associated management measures.

Activity Overview

Activities: Stybarrow P&A EP Stybarrow Field Deviation EP	<ul style="list-style-type: none"> • The P&A of 10 production/injection wells • Removal of the H4 flexible production flowline Proposed leave <i>in situ</i> : <ul style="list-style-type: none"> • The disconnectable turret mooring (DTM) anchors. Each anchor is buried, is approximately 6m x 6m x 3m, and weighs 11 tonnes. • Suction gravity bases for the riser holdbacks and water injection manifold. The riser bases embedded in the seabed, and clamps and chains will be removed. Riser bases are 4m in diameter and 7m high.
Petroleum title:	Production Licence WA-32-L
Activity location:	Approximately 53 km north-west of Exmouth, Western Australia
Infrastructure locations:	See attached Stakeholder Information Fact Sheet
Approximate water depth:	Approximately 810-850 m

Stybarrow End State Decommissioning Environment Plan

Estimate start date:	Earliest P&A start is 2024 calendar year, subject to approvals, MODU and vessel availability, and weather constraints. P&A must be completed no later than 30 September 2024.
Approximate duration:	Approximately 6 months
Vessels:	Semi submersible mobile offshore drilling unit (MODU) (Dynamic positioning) Offshore support vessels, such as general support/supply vessels, construction support vessels/installation vessels. Typically, two (but up to six) project vessels will be in the Operational Area during well P&A and subsea infrastructure removal activities.
Operational area:	A 500 m safety exclusion zone around the wells and a 1,500 m radius temporary Operational Area (precautionary) around the wells and subsea equipment for the duration of the activity.

Your Feedback

Your feedback on the proposed activity and our response will be provided to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), as is required under the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009.

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Please provide comment as soon as practicable. Comments can be made by email, letter or by phone (refer to attached Fact Sheet for contact details) by close of business on **24 June 2022**.

Regards,

BHP

1.5 Email sent to Department of Biodiversity, Conservation and Attractions (DBCA) (27 May 2022)

INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

Fri 5/27/2022 6:29 AM

To: embadmin@dbca.wa.gov.au <embadmin@dbca.wa.gov.au>

Cc: BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

📎 1 attachments (691 KB)

Fact Sheet - Stybarrow P&A and Decommissioning Environment Plans.pdf;

Dear DBCA

BHP is planning for the next stage of its ongoing safe and sustainable closure of the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia.

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BHP consulted stakeholders in March 2022 on the first phase of decommissioning, these being activities for the proposed removal of the Stybarrow subsea equipment and ongoing field management activities until the equipment is removed. Feedback from stakeholders was considered in planning the Stybarrow Equipment Removal Environment Plan (EP), which was submitted to National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) in April 2022 for assessment.

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A summary of proposed activities to be managed under each EP follows and a fact sheet is attached providing more detail on infrastructure location and activity, as well as a summary of risks and associated management measures.

Activity Overview

Activities: Stybarrow P&A EP Stybarrow Field Deviation EP	<ul style="list-style-type: none"> • The P&A of 10 production/injection wells • Removal of the H4 flexible production flowline <p>Proposed leave <i>in situ</i>:</p> <ul style="list-style-type: none"> • The disconnectable turret mooring (DTM) anchors. Each anchor is buried, is approximately 6m x 6m x 3m, and weighs 11 tonnes. • Suction gravity bases for the riser holdbacks and water injection manifold. The riser bases embedded in the seabed, and clamps and chains will be removed. Riser bases are 4m in diameter and 7m high.
Petroleum title:	Production Licence WA-32-L
Activity location:	Approximately 53 km north-west of Exmouth, Western Australia
Infrastructure locations:	See attached Stakeholder Information Fact Sheet
Approximate water depth:	Approximately 810-850 m

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Stybarrow End State Decommissioning Environment Plan

Estimate start date:	Earliest P&A start is 2024 calendar year, subject to approvals, MODU and vessel availability, and weather constraints. P&A must be completed no later than 30 September 2024.
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Please provide comment as soon as practicable. Comments can be made by email, letter or by phone (refer to attached Fact Sheet for contact details) by close of business on **24 June 2022**.

Regards,

BHP

1.6 Email sent to Department of Mines, Industry Regulation and Safety (DMIRS) (27 May 2022)

INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

Fri 5/27/2022 6:30 AM

To:petroleum.environment@dmp.wa.gov.au <petroleum.environment@dmp.wa.gov.au>

Cc:BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

1 attachments (691 KB)

Fact Sheet - Stybarrow P&A and Decommissioning Environment Plans.pdf;

Dear DMIRS

BHP is planning for the next stage of its ongoing safe and sustainable closure of the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia.

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BHP consulted stakeholders in March 2022 on the first phase of decommissioning, these being activities for the proposed removal of the Stybarrow subsea equipment and ongoing field management activities until the equipment is removed. Feedback from stakeholders was considered in planning the Stybarrow Equipment Removal Environment Plan (EP), which was submitted to National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) in April 2022 for assessment.

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Petroleum title:	Production Licence WA-32-L
Activity location:	Approximately 53 km north-west of Exmouth, Western Australia
Infrastructure locations:	See attached Stakeholder Information Fact Sheet
Approximate water depth:	Approximately 810-850 m

<https://outlook.office.com/mail/bhppetexternalaffairs@petroleumdeepwater.com/AAMkADg3MzRhZDk4LWFYTIiNDIwNC05ZDU3LTEwMDM1ZWNmN...> 1/2

Stybarrow End State Decommissioning Environment Plan

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Regards,

BHP

1.7 Email sent to Department of Transport (DoT) (27 May 2022)

Stybarrow End State Decommissioning Environment Plan

INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

Fri 5/27/2022 6:41 AM

To:marine.pollution@transport.wa.gov.au <marine.pollution@transport.wa.gov.au>

Cc:BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

📎 1 attachments (691 KB)

Fact Sheet - Stybarrow P&A and Decommissioning Environment Plans.pdf;

Dear DoT

BHP is planning for the next stage of its ongoing safe and sustainable closure of the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia.

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Stybarrow End State Decommissioning Environment Plan

Estimate start date:	Earliest P&A start is 2024 calendar year, subject to approvals, MODU and vessel availability, and weather constraints. P&A must be completed no later than 30 September 2024.
Approximate duration:	Approximately 6 months
Vessels:	Semi submersible mobile offshore drilling unit (MODU) (Dynamic positioning) Offshore support vessels, such as general support/supply vessels, construction support vessels/installation vessels. Typically, two (but up to six) project vessels will be in the Operational Area during well P&A and subsea infrastructure removal activities.
Operational area:	A 500 m safety exclusion zone around the wells and a 1,500 m radius temporary Operational Area (precautionary) around the wells and subsea equipment for the duration of the activity.

Your Feedback

Your feedback on the proposed activity and our response will be provided to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), as is required under the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009.

As a relevant stakeholder you are invited to provide comments. The Environment Plan will contain a summary of all comments received. However, BHP will not use or disclose your personal information in the Environment Plan. Full transcripts of all correspondence will be included in a separate sensitive information part of the Environment Plan provided to NOPSEMA.

Please provide comment as soon as practicable. Comments can be made by email, letter or by phone (refer to attached Fact Sheet for contact details) by close of business on **24 June 2022**.

Regards,

BHP

1.8 Email sent to Western Australian Fishing Industry Council (WAFIC) (27 May 2022)

Stybarrow End State Decommissioning Environment Plan

From: BHP PET External Affairs <bhppetexternalaffairs@bhp.com>
Sent: Friday, 27 May 2022 3:02 PM
To: [REDACTED] oilandgas@wafic.org.au>
Cc: BHP PET External Affairs <bhppetexternalaffairs@bhp.com>
Subject: INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

Dear WAFIC

BHP is planning for the next stage of its ongoing safe and sustainable closure of the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia.

Production from the Stybarrow Field commenced in 2007 and ceased in 2015. Since that time the following cessation activities have been completed:

- All flowlines and gas lift lines were flushed and filled with treated seawater and production flowlines disconnected (except for an abandoned flowline which was blocked by sand and gas hydrate during production, which is disconnected, sealed and lying on the seabed).
- All production, gas injection and water injection wells were shut in and capped.
- The Stybarrow Venture FPSO was disconnected from the DTM and departed from the field in August 2015.

BHP consulted stakeholders in March 2022 on the first phase of decommissioning, these being activities for the proposed removal of the Stybarrow subsea equipment and ongoing field management activities until the equipment is removed. Feedback from stakeholders was considered in planning the Stybarrow Equipment Removal Environment Plan (EP), which was submitted to National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) in April 2022 for assessment.

BHP is now seeking stakeholder feedback on well plug and abandonment (P&A) and decommissioning activities, which are proposed to be managed under two separate Environment Plans, these being:

- Stybarrow P&A EP
- Stybarrow Field Deviation EP

A summary of proposed activities to be managed under each EP follows and a fact sheet is attached providing more detail on infrastructure location and activity, as well as a summary of risks and associated management measures.

Activity Overview

Activities: Stybarrow P&A EP Stybarrow Field Deviation EP	<ul style="list-style-type: none">• The P&A of 10 production/injection wells• Removal of the H4 flexible production flowline <p>Proposed leave <i>in situ</i>:</p> <ul style="list-style-type: none">• The disconnectable turret mooring (DTM) anchors. Each anchor is buried, is approximately 6m x 6m x 3m, and weighs 11 tonnes.• Suction gravity bases for the riser holdbacks and water injection manifold. The riser bases embedded in the seabed, and clamps and chains will be removed. Riser bases are 4m in diameter and 7m high.
Petroleum title:	Production Licence WA-32-L
Activity location:	Approximately 53 km north-west of Exmouth, Western Australia
Infrastructure locations:	See attached Stakeholder Information Fact Sheet
Approximate water depth:	Approximately 810-850 m
Estimate start date:	Earliest P&A start is 2024 calendar year, subject to approvals, MODU and vessel availability, and weather constraints. P&A must be completed no later than 30 September 2024.
Approximate duration:	Approximately 6 months

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Stybarrow End State Decommissioning Environment Plan

Vessels:	Semi submersible mobile offshore drilling unit (MODU) (Dynamic positioning) Offshore support vessels, such as general support/supply vessels, construction support vessels/installation vessels. Typically, two (but up to six) project vessels will be in the Operational Area during well P&A and subsea infrastructure removal activities.
Operational area:	A 500 m safety exclusion zone around the wells and a 1,500 m radius temporary Operational Area (precautionary) around the wells and subsea equipment for the duration of the activity.

Commercial Fishing Overview

Commercial fisheries have been identified as being relevant to the proposed activities on the basis of fishing licence overlap with the proposed Operational (activity) Area, as well as consideration of fishing effort data, fishing methods and water depth.

Commonwealth fisheries

There are four overlapping Commonwealth fisheries, of which the Western Deepwater Trawl Fishery has been identified as relevant based on the identification criteria. BHP will consult representative organisations and licence holders entitled to fish in the Operational Area.

State fisheries

There are six overlapping State fisheries, of which the following fisheries have been identified as being relevant based on the identification criteria. Individual licence holders in these fisheries will be consulted.

- Mackerel Managed Fishery (Area 3)
- West Coast Deep Sea Crustacean Managed Fishery

The following government departments and organisations will also be consulted on behalf of licence holders entitled to fish in the Operational Area:

Commonwealth Fisheries:

- Australian Fisheries Management Authority
- Australian Southern Bluefin Tuna Industry Association on behalf of licence holders in the Southern Bluefin Tuna and Western Skipjack Tuna Fisheries
- Department of Agriculture, Water and the Environment
- Commonwealth Fisheries Association on behalf of licence holders in the Western Deepwater Trawl, Western Tuna and Billfish and Western Skipjack Tuna Fisheries
- Tuna Australia on behalf of licence holders in the Western Tuna and Billfish Fishery

State Fisheries and recreational fishing:

- Department of Primary Industry and Resources
- Western Australian Fishing Industry Council
- Pearl Producers Association
- Recfishwest

Your Feedback

Your feedback on the proposed activity and our response will be provided to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), as is required under the Commonwealth Offshore Petroleum and

Stybarrow End State Decommissioning Environment Plan

Greenhouse Gas Storage (Environment) Regulations 2009.

As a relevant stakeholder you are invited to provide comments. The Environment Plan will contain a summary of all comments received. However, BHP will not use or disclose your personal information in the Environment Plan. Full transcripts of all correspondence will be included in a separate sensitive information part of the Environment Plan provided to NOPSEMA.

Please provide comment as soon as practicable. Comments can be made by email, letter or by phone (refer to attached Fact Sheet for contact details) by close of business on **24 June 2022**.

Regards,

BHP

1.9 Email sent to Exmouth Recreational Marine Users (27 May 2022)

INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

BHP PET External Affairs <bhppetexternalaffairs@petroleumdeepwater.com>

Fri 5/27/2022 7:26 AM

Cc:BHP PET External Affairs <bhppetexternalaffairs@petroleumdeepwater.com>

Bcc:andro@andromaritime.com.au <andro@andromaritime.com.au>;shimanoexplorer1@gmail.com <shimanoexplorer1@gmail.com>;booking@birdseyeview.net.au <booking@birdseyeview.net.au>;bookings@bluehorizoncharters.com.au <bookings@bluehorizoncharters.com.au>;info@bluelightningfishingcharters.com.au <info@bluelightningfishingcharters.com.au>;immersion@outlook.com.au <immersion@outlook.com.au>;coralbreeze@bigpond.com <coralbreeze@bigpond.com>;enquiries@coralbayecotours.com.au <enquiries@coralbayecotours.com.au>;bookings@cruisingaloo.com.au <bookings@cruisingaloo.com.au>;bookings@dampierislandtourism.com.au <bookings@dampierislandtourism.com.au>;info@diveningaloo.com.au <info@diveningaloo.com.au>;evolutionfishingcharters@gmail.com <evolutionfishingcharters@gmail.com>;info@exmouthadventureco.com.au <info@exmouthadventureco.com.au>;bookings@exmouthdiving.com.au <bookings@exmouthdiving.com.au>;[REDACTED]@exmouthflyfishing.com.au <[REDACTED]@exmouthflyfishing.com.au>;[REDACTED]@indianchiefcharters.com.au <[REDACTED]@indianchiefcharters.com.au>;innkeepersportfishing@gmail.com <innkeepersportfishing@gmail.com>;innkeepersportfishing@gmail.com <innkeepersportfishing@gmail.com>;info@kingsningaloooreeftours.com.au <info@kingsningaloooreeftours.com.au>;info@liveningaloo.com.au <info@liveningaloo.com.au>

📎 1 attachments (691 KB)

Fact Sheet - Stybarrow P&A and Decommissioning Environment Plans.pdf;

Dear tourism/charter operator

BHP is planning for the next stage of its ongoing safe and sustainable closure of the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia.

Production from the Stybarrow Field commenced in 2007 and ceased in 2015. Since that time the following cessation activities have been completed:

- All flowlines and gas lift lines were flushed and filled with treated seawater and production flowlines disconnected (except for an abandoned flowline which was blocked by sand and gas hydrate during production, which is disconnected, sealed and lying on the seabed).
- All production, gas injection and water injection wells were shut in and capped.
- The Stybarrow Venture FPSO was disconnected from the DTM and departed from the field in August 2015.

BHP consulted stakeholders in March 2022 on the first phase of decommissioning, these being activities for the proposed removal of the Stybarrow subsea equipment and ongoing field management activities until the equipment is removed. Feedback from stakeholders was considered in planning the Stybarrow Equipment Removal Environment Plan (EP), which was submitted to National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) in April 2022 for assessment.

BHP is now seeking stakeholder feedback on well plug and abandonment (P&A) and decommissioning activities, which are proposed to be managed under two separate Environment Plans, these being:

- Stybarrow P&A EP
- Stybarrow Field Deviation EP

Stybarrow End State Decommissioning Environment Plan

A summary of proposed activities to be managed under each EP follows and a fact sheet is attached providing more detail on infrastructure location and activity, as well as a summary of risks and associated management measures.

Activity Overview

Activities: Stybarrow P&A EP Stybarrow Field Deviation EP	<ul style="list-style-type: none">The P&A of 10 production/injection wellsRemoval of the H4 flexible production flowline <p>Proposed leave <i>in situ</i>:</p> <ul style="list-style-type: none">The disconnectable turret mooring (DTM) anchors. Each anchor is buried, is approximately 6m x 6m x 3m, and weighs 11 tonnes.Suction gravity bases for the riser holdbacks and water injection manifold. The riser bases embedded in the seabed, and clamps and chains will be removed. Riser bases are 4m in diameter and 7m high.
Petroleum title:	Production Licence WA-32-L
Activity location:	Approximately 53 km north-west of Exmouth, Western Australia
Infrastructure locations:	See attached Stakeholder Information Fact Sheet
Approximate water depth:	Approximately 810-850 m
Estimate start date:	Earliest P&A start is 2024 calendar year, subject to approvals, MODU and vessel availability, and weather constraints. P&A must be completed no later than 30 September 2024.
Approximate duration:	Approximately 6 months
Vessels:	Semi submersible mobile offshore drilling unit (MODU) (Dynamic positioning) Offshore support vessels, such as general support/supply vessels, construction support vessels/installation vessels. Typically, two (but up to six) project vessels will be in the Operational Area during well P&A and subsea infrastructure removal activities.
Operational area:	A 500 m safety exclusion zone around the wells and a 1,500 m radius temporary Operational Area (precautionary) around the wells and subsea equipment for the duration of the activity.

Your Feedback

Your feedback on the proposed activity and our response will be provided to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), as is required under the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009.

As a relevant stakeholder you are invited to provide comments. The Environment Plan will contain a summary of all comments received. However, BHP will not use or disclose your personal information in the Environment Plan. Full transcripts of all correspondence will be included in a separate sensitive information part of the Environment Plan provided to NOPSEMA.

Please provide comment as soon as practicable. Comments can be made by email, letter or by phone (refer to attached Fact Sheet for contact details) by close of business on **24 June 2022**.

Regards,

BHP

1.10 Email sent to Department of Agriculture, Water and the Environment (DAWE) (27 May 2022)

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INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

Fri 5/27/2022 6:22 AM

To:seaports@agriculture.gov.au <seaports@agriculture.gov.au>;pestmarine@agriculture.gov.au
<pestmarine@agriculture.gov.au>;petroleum&fisheries@agriculture.gov.au
<petroleum&fisheries@agriculture.gov.au>

Cc:BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

📎 1 attachments (691 KB)

Fact Sheet - Stybarrow P&A and Decommissioning Environment Plans.pdf;

Dear stakeholder

BHP is planning for the next stage of its ongoing safe and sustainable closure of the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia.

Production from the Stybarrow Field commenced in 2007 and ceased in 2015. Since that time the following cessation activities have been completed:

- All flowlines and gas lift lines were flushed and filled with treated seawater and production flowlines disconnected (except for an abandoned flowline which was blocked by sand and gas hydrate during production, which is disconnected, sealed and lying on the seabed).
- All production, gas injection and water injection wells were shut in and capped.
- The Stybarrow Venture FPSO was disconnected from the DTM and departed from the field in August 2015.

BHP consulted stakeholders in March 2022 on the first phase of decommissioning, these being activities for the proposed removal of the Stybarrow subsea equipment and ongoing field management activities until the equipment is removed.

Feedback from stakeholders was considered in planning the Stybarrow Equipment Removal Environment Plan (EP), which was submitted to National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) in April 2022 for assessment.

BHP is now seeking stakeholder feedback on well plug and abandonment (P&A) and decommissioning activities, which are proposed to be managed under two separate Environment Plans, these being:

- Stybarrow P&A EP
- Stybarrow Field Deviation EP

A summary of proposed activities to be managed under each EP follows and a fact sheet is attached providing more detail on infrastructure location and activity, as well as a summary of risks and associated management measures.

Activity Overview

<p>Activities:</p> <p>Stybarrow P&A EP</p> <p>Stybarrow Field Deviation EP</p>	<ul style="list-style-type: none"> • The P&A of 10 production/injection wells • Removal of the H4 flexible production flowline <p>Proposed leave <i>in situ</i>:</p> <ul style="list-style-type: none"> • The disconnectable turret mooring (DTM) anchors. Each anchor is buried, is approximately 6m x 6m x 3m, and weighs 11 tonnes. • Suction gravity bases for the riser holdbacks and water injection manifold. The riser bases embedded in the seabed, and clamps and chains will be removed. Riser bases are 4m in diameter and 7m high.
<p>Petroleum title:</p>	<p>Production Licence WA-32-L</p>

Stybarrow End State Decommissioning Environment Plan

Activity location:	Approximately 53 km north-west of Exmouth, Western Australia
Infrastructure locations:	See attached Stakeholder Information Fact Sheet
Approximate water depth:	Approximately 810-850 m
Estimate start date:	Earliest P&A start is 2024 calendar year, subject to approvals, MODU and vessel availability, and weather constraints. P&A must be completed no later than 30 September 2024.
Approximate duration:	Approximately 6 months
Vessels:	Semi submersible mobile offshore drilling unit (MODU) (Dynamic positioning) Offshore support vessels, such as general support/supply vessels, construction support vessels/installation vessels. Typically, two (but up to six) project vessels will be in the Operational Area during well P&A and subsea infrastructure removal activities.
Operational area:	A 500 m safety exclusion zone around the wells and a 1,500 m radius temporary Operational Area (precautionary) around the wells and subsea equipment for the duration of the activity.

Commercial Fishing Overview

Stybarrow End State Decommissioning Environment Plan

Commercial fisheries have been identified as being relevant to the proposed activities on the basis of fishing licence overlap with the proposed Operational (activity) Area, as well as consideration of fishing effort data, fishing methods and water depth.

Commonwealth fisheries

There are four overlapping Commonwealth fisheries, of which the Western Deepwater Trawl Fishery has been identified as relevant based on the identification criteria. BHP will consult representative organisations and licence holders entitled to fish in the Operational Area.

State fisheries

There are six overlapping State fisheries, of which the following fisheries have been identified as being relevant based on the identification criteria. Individual licence holders in these fisheries will be consulted.

- Mackerel Managed Fishery (Area 3)
- West Coast Deep Sea Crustacean Managed Fishery

The following government departments and organisations will also be consulted on behalf of licence holders entitled to fish in the Operational Area:

Commonwealth Fisheries:

- Australian Fisheries Management Authority
- Australian Southern Bluefin Tuna Industry Association on behalf of licence holders in the Southern Bluefin Tuna and Western Skipjack Tuna Fisheries
- Department of Agriculture, Water and the Environment
- Commonwealth Fisheries Association on behalf of licence holders in the Western Deepwater Trawl, Western Tuna and Billfish and Western Skipjack Tuna Fisheries
- Tuna Australia on behalf of licence holders in the Western Tuna and Billfish Fishery

State Fisheries and recreational fishing:

- Department of Primary Industry and Resources
- Western Australian Fishing Industry Council
- Pearl Producers Association
- Recfishwest

Your Feedback

Your feedback on the proposed activity and our response will be provided to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), as is required under the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009.

As a relevant stakeholder you are invited to provide comments. The Environment Plan will contain a summary of all comments received. However, BHP will not use or disclose your personal information in the Environment Plan. Full transcripts of all correspondence will be included in a separate sensitive information part of the Environment Plan provided to NOPSEMA.

Please provide comment as soon as practicable. Comments can be made by email, letter or by phone (refer to attached Fact Sheet for contact details) by close of business on **24 June 2022**.

Regards,

BHP

1.11 Email sent to Department of Defence (DoD) (27 May 2022)

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INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

Fri 5/27/2022 6:23 AM

To:offshore.petroleum@defence.gov.au <offshore.petroleum@defence.gov.au>

Cc:BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

📎 1 attachments (691 KB)

Fact Sheet - Stybarrow P&A and Decommissioning Environment Plans.pdf;

Dear Department of Defence

BHP is planning for the next stage of its ongoing safe and sustainable closure of the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia.

Production from the Stybarrow Field commenced in 2007 and ceased in 2015. Since that time the following cessation activities have been completed:

- All flowlines and gas lift lines were flushed and filled with treated seawater and production flowlines disconnected (except for an abandoned flowline which was blocked by sand and gas hydrate during production, which is disconnected, sealed and lying on the seabed).
- All production, gas injection and water injection wells were shut in and capped.
- The Stybarrow Venture FPSO was disconnected from the DTM and departed from the field in August 2015.

BHP consulted stakeholders in March 2022 on the first phase of decommissioning, these being activities for the proposed removal of the Stybarrow subsea equipment and ongoing field management activities until the equipment is removed. Feedback from stakeholders was considered in planning the Stybarrow Equipment Removal Environment Plan (EP), which was submitted to National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) in April 2022 for assessment.

BHP is now seeking stakeholder feedback on well plug and abandonment (P&A) and decommissioning activities, which are proposed to be managed under two separate Environment Plans, these being:

- Stybarrow P&A EP
- Stybarrow Field Deviation EP

A summary of proposed activities to be managed under each EP follows and a fact sheet is attached providing more detail on infrastructure location and activity, as well as a summary of risks and associated management measures.

Activity Overview

Activities: Stybarrow P&A EP Stybarrow Field Deviation EP	<ul style="list-style-type: none"> • The P&A of 10 production/injection wells • Removal of the H4 flexible production flowline Proposed leave <i>in situ</i> : <ul style="list-style-type: none"> • The disconnectable turret mooring (DTM) anchors. Each anchor is buried, is approximately 6m x 6m x 3m, and weighs 11 tonnes. • Suction gravity bases for the riser holdbacks and water injection manifold. The riser bases embedded in the seabed, and clamps and chains will be removed. Riser bases are 4m in diameter and 7m high.
Petroleum title:	Production Licence WA-32-L
Activity location:	Approximately 53 km north-west of Exmouth, Western Australia
Infrastructure locations:	See attached Stakeholder Information Fact Sheet
Approximate water depth:	Approximately 810-850 m

Stybarrow End State Decommissioning Environment Plan

Estimate start date:	Earliest P&A start is 2024 calendar year, subject to approvals, MODU and vessel availability, and weather constraints. P&A must be completed no later than 30 September 2024.
Approximate duration:	Approximately 6 months
Vessels:	Semi submersible mobile offshore drilling unit (MODU) (Dynamic positioning) Offshore support vessels, such as general support/supply vessels, construction support vessels/installation vessels. Typically, two (but up to six) project vessels will be in the Operational Area during well P&A and subsea infrastructure removal activities.
Operational area:	A 500 m safety exclusion zone around the wells and a 1,500 m radius temporary Operational Area (precautionary) around the wells and subsea equipment for the duration of the activity.

Your Feedback

Your feedback on the proposed activity and our response will be provided to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), as is required under the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009.

As a relevant stakeholder you are invited to provide comments. The Environment Plan will contain a summary of all comments received. However, BHP will not use or disclose your personal information in the Environment Plan. Full transcripts of all correspondence will be included in a separate sensitive information part of the Environment Plan provided to NOPSEMA.

Please provide comment as soon as practicable. Comments can be made by email, letter or by phone (refer to attached Fact Sheet for contact details) by close of business on **24 June 2022**.

Regards,

BHP

1.12 Email sent to Department of Primary Industries and Regional Development (DPIRD) (27 May 2022)

INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

Fri 5/27/2022 6:39 AM

To: [REDACTED]@dpird.wa.gov.au [REDACTED]@dpird.wa.gov.au

Cc: BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

1 attachments (691 KB)

Fact Sheet - Stybarrow P&A and Decommissioning Environment Plans.pdf;

Dear DPIRD

BHP is planning for the next stage of its ongoing safe and sustainable closure of the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia.

Production from the Stybarrow Field commenced in 2007 and ceased in 2015. Since that time the following cessation activities have been completed:

- All flowlines and gas lift lines were flushed and filled with treated seawater and production flowlines disconnected (except for an abandoned flowline which was blocked by sand and gas hydrate during production, which is disconnected, sealed and lying on the seabed).
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BHP consulted stakeholders in March 2022 on the first phase of decommissioning, these being activities for the proposed removal of the Stybarrow subsea equipment and ongoing field management activities until the equipment is removed. Feedback from stakeholders was considered in planning the Stybarrow Equipment Removal Environment Plan (EP), which was submitted to National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) in April 2022 for assessment.

BHP is now seeking stakeholder feedback on well plug and abandonment (P&A) and decommissioning activities, which are proposed to be managed under two separate Environment Plans, these being:

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A summary of proposed activities to be managed under each EP follows and a fact sheet is attached providing more detail on infrastructure location and activity, as well as a summary of risks and associated management measures.

Activity Overview

Activities: Stybarrow P&A EP Stybarrow Field Deviation EP	<ul style="list-style-type: none"> • The P&A of 10 production/injection wells • Removal of the H4 flexible production flowline Proposed leave <i>in situ</i> : <ul style="list-style-type: none"> • The disconnectable turret mooring (DTM) anchors. Each anchor is buried, is approximately 6m x 6m x 3m, and weighs 11 tonnes. • Suction gravity bases for the riser holdbacks and water injection manifold. The riser bases embedded in the seabed, and clamps and chains will be removed. Riser bases are 4m in diameter and 7m high.
Petroleum title:	Production Licence WA-32-L
Activity location:	Approximately 53 km north-west of Exmouth, Western Australia
Infrastructure locations:	See attached Stakeholder Information Fact Sheet
Approximate water depth:	Approximately 810-850 m

Stybarrow End State Decommissioning Environment Plan

Estimate start date:	Earliest P&A start is 2024 calendar year, subject to approvals, MODU and vessel availability, and weather constraints. P&A must be completed no later than 30 September 2024.
Approximate duration:	Approximately 6 months
Vessels:	Semi submersible mobile offshore drilling unit (MODU) (Dynamic positioning) Offshore support vessels, such as general support/supply vessels, construction support vessels/installation vessels. Typically, two (but up to six) project vessels will be in the Operational Area during well P&A and subsea infrastructure removal activities.
Operational area:	A 500 m safety exclusion zone around the wells and a 1,500 m radius temporary Operational Area (precautionary) around the wells and subsea equipment for the duration of the activity.

Commercial Fishing Overview

Stybarrow End State Decommissioning Environment Plan

Commercial fisheries have been identified as being relevant to the proposed activities on the basis of fishing licence overlap with the proposed Operational (activity) Area, as well as consideration of fishing effort data, fishing methods and water depth.

Commonwealth fisheries

There are four overlapping Commonwealth fisheries, of which the Western Deepwater Trawl Fishery has been identified as relevant based on the identification criteria. BHP will consult representative organisations and licence holders entitled to fish in the Operational Area.

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There are six overlapping State fisheries, of which the following fisheries have been identified as being relevant based on the identification criteria. Individual licence holders in these fisheries will be consulted.

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The following government departments and organisations will also be consulted on behalf of licence holders entitled to fish in the Operational Area:

Commonwealth Fisheries:

- Australian Fisheries Management Authority
- Australian Southern Bluefin Tuna Industry Association on behalf of licence holders in the Southern Bluefin Tuna and Western Skipjack Tuna Fisheries
- Department of Agriculture, Water and the Environment
- Commonwealth Fisheries Association on behalf of licence holders in the Western Deepwater Trawl, Western Tuna and Billfish and Western Skipjack Tuna Fisheries
- Tuna Australia on behalf of licence holders in the Western Tuna and Billfish Fishery

State Fisheries and recreational fishing:

- Department of Primary Industry and Resources
- Western Australian Fishing Industry Council
- Pearl Producers Association
- Recfishwest

Your Feedback

Your feedback on the proposed activity and our response will be provided to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), as is required under the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009.

As a relevant stakeholder you are invited to provide comments. The Environment Plan will contain a summary of all comments received. However, BHP will not use or disclose your personal information in the Environment Plan. Full transcripts of all correspondence will be included in a separate sensitive information part of the Environment Plan provided to NOPSEMA.

Please provide comment as soon as practicable. Comments can be made by email, letter or by phone (refer to attached Fact Sheet for contact details) by close of business on **24 June 2022**.

Regards,

BHP

1.13 Email sent to Department of Industry, Science, Energy and Resources (DISER) (27 May 2022)

INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

Fri 5/27/2022 6:25 AM

To:resourcesandenergy@industry.gov.au <resourcesandenergy@industry.gov.au>

Cc:BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

📎 1 attachments (691 KB)

Fact Sheet - Stybarrow P&A and Decommissioning Environment Plans.pdf;

Dear DISER

BHP is planning for the next stage of its ongoing safe and sustainable closure of the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia.

Production from the Stybarrow Field commenced in 2007 and ceased in 2015. Since that time the following cessation activities have been completed:

- All flowlines and gas lift lines were flushed and filled with treated seawater and production flowlines disconnected (except for an abandoned flowline which was blocked by sand and gas hydrate during production, which is disconnected, sealed and lying on the seabed).
- All production, gas injection and water injection wells were shut in and capped.
- The Stybarrow Venture FPSO was disconnected from the DTM and departed from the field in August 2015.

BHP consulted stakeholders in March 2022 on the first phase of decommissioning, these being activities for the proposed removal of the Stybarrow subsea equipment and ongoing field management activities until the equipment is removed. Feedback from stakeholders was considered in planning the Stybarrow Equipment Removal Environment Plan (EP), which was submitted to National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) in April 2022 for assessment.

BHP is now seeking stakeholder feedback on well plug and abandonment (P&A) and decommissioning activities, which are proposed to be managed under two separate Environment Plans, these being:

- Stybarrow P&A EP
- Stybarrow Field Deviation EP

A summary of proposed activities to be managed under each EP follows and a fact sheet is attached providing more detail on infrastructure location and activity, as well as a summary of risks and associated management measures.

Activity Overview

Activities: Stybarrow P&A EP Stybarrow Field Deviation EP	<ul style="list-style-type: none"> • The P&A of 10 production/injection wells • Removal of the H4 flexible production flowline Proposed leave <i>in situ</i> : <ul style="list-style-type: none"> • The disconnectable turret mooring (DTM) anchors. Each anchor is buried, is approximately 6m x 6m x 3m, and weighs 11 tonnes. • Suction gravity bases for the riser holdbacks and water injection manifold. The riser bases embedded in the seabed, and clamps and chains will be removed. Riser bases are 4m in diameter and 7m high.
Petroleum title:	Production Licence WA-32-L
Activity location:	Approximately 53 km north-west of Exmouth, Western Australia
Infrastructure locations:	See attached Stakeholder Information Fact Sheet
Approximate water depth:	Approximately 810-850 m

s://outlook.office.com/mail/bhppetexternalaffairs@petroleumdeepwater.com/AAMkADg3MzRhZDk4LWFYITtNDIwNC05ZDU3LTEwMDM1ZWNmN... 1/2

Stybarrow End State Decommissioning Environment Plan

Estimate start date:	Earliest P&A start is 2024 calendar year, subject to approvals, MODU and vessel availability, and weather constraints. P&A must be completed no later than 30 September 2024.
Approximate duration:	Approximately 6 months
Vessels:	Semi submersible mobile offshore drilling unit (MODU) (Dynamic positioning) Offshore support vessels, such as general support/supply vessels, construction support vessels/installation vessels. Typically, two (but up to six) project vessels will be in the Operational Area during well P&A and subsea infrastructure removal activities.
Operational area:	A 500 m safety exclusion zone around the wells and a 1,500 m radius temporary Operational Area (precautionary) around the wells and subsea equipment for the duration of the activity.

Your Feedback

Your feedback on the proposed activity and our response will be provided to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), as is required under the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009.

As a relevant stakeholder you are invited to provide comments. The Environment Plan will contain a summary of all comments received. However, BHP will not use or disclose your personal information in the Environment Plan. Full transcripts of all correspondence will be included in a separate sensitive information part of the Environment Plan provided to NOPSEMA.

Please provide comment as soon as practicable. Comments can be made by email, letter or by phone (refer to attached Fact Sheet for contact details) by close of business on **24 June 2022**.

Regards,

BHP

1.14 Email sent to Recfishwest (27 May 2022)

INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

Fri 5/27/2022 7:04 AM

To: [REDACTED]@recfishwest.org.au [REDACTED]@recfishwest.org.au

Cc: BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

📎 1 attachments (691 KB)

Fact Sheet - Stybarrow P&A and Decommissioning Environment Plans.pdf;

Dear Recfishwest

BHP is planning for the next stage of its ongoing safe and sustainable closure of the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia.

Production from the Stybarrow Field commenced in 2007 and ceased in 2015. Since that time the following cessation activities have been completed:

- All flowlines and gas lift lines were flushed and filled with treated seawater and production flowlines disconnected (except for an abandoned flowline which was blocked by sand and gas hydrate during production, which is disconnected, sealed and lying on the seabed).
- All production, gas injection and water injection wells were shut in and capped.
- The Stybarrow Venture FPSO was disconnected from the DTM and departed from the field in August 2015.

BHP consulted stakeholders in March 2022 on the first phase of decommissioning, these being activities for the proposed removal of the Stybarrow subsea equipment and ongoing field management activities until the equipment is removed. Feedback from stakeholders was considered in planning the Stybarrow Equipment Removal Environment Plan (EP), which was submitted to National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) in April 2022 for assessment.

BHP is now seeking stakeholder feedback on well plug and abandonment (P&A) and decommissioning activities, which are proposed to be managed under two separate Environment Plans, these being:

- Stybarrow P&A EP
- Stybarrow Field Deviation EP

A summary of proposed activities to be managed under each EP follows and a fact sheet is attached providing more detail on infrastructure location and activity, as well as a summary of risks and associated management measures.

Activity Overview

Activities: Stybarrow P&A EP Stybarrow Field Deviation EP	<ul style="list-style-type: none"> • The P&A of 10 production/injection wells • Removal of the H4 flexible production flowline Proposed leave <i>in situ</i> : <ul style="list-style-type: none"> • The disconnectable turret mooring (DTM) anchors. Each anchor is buried, is approximately 6m x 6m x 3m, and weighs 11 tonnes. • Suction gravity bases for the riser holdbacks and water injection manifold. The riser bases embedded in the seabed, and clamps and chains will be removed. Riser bases are 4m in diameter and 7m high.
Petroleum title:	Production Licence WA-32-L
Activity location:	Approximately 53 km north-west of Exmouth, Western Australia
Infrastructure locations:	See attached Stakeholder Information Fact Sheet
Approximate water depth:	Approximately 810-850 m

Stybarrow End State Decommissioning Environment Plan

Estimate start date:	Earliest P&A start is 2024 calendar year, subject to approvals, MODU and vessel availability, and weather constraints. P&A must be completed no later than 30 September 2024.
Approximate duration:	Approximately 6 months
Vessels:	Semi submersible mobile offshore drilling unit (MODU) (Dynamic positioning) Offshore support vessels, such as general support/supply vessels, construction support vessels/installation vessels. Typically, two (but up to six) project vessels will be in the Operational Area during well P&A and subsea infrastructure removal activities.
Operational area:	A 500 m safety exclusion zone around the wells and a 1,500 m radius temporary Operational Area (precautionary) around the wells and subsea equipment for the duration of the activity.

Your Feedback

Your feedback on the proposed activity and our response will be provided to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), as is required under the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009.

As a relevant stakeholder you are invited to provide comments. The Environment Plan will contain a summary of all comments received. However, BHP will not use or disclose your personal information in the Environment Plan. Full transcripts of all correspondence will be included in a separate sensitive information part of the Environment Plan provided to NOPSEMA.

Please provide comment as soon as practicable. Comments can be made by email, letter or by phone (refer to attached Fact Sheet for contact details) by close of business on **24 June 2022**.

Regards,

BHP

1.15 Email sent to Marine Tourism WA (27 May 2022)

INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

Fri 5/27/2022 7:05 AM

To:marinetourismwa@gmail.com <marinetourismwa@gmail.com>

Cc:BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

📎 1 attachments (691 KB)

Fact Sheet – Stybarrow P&A and Decommissioning Environment Plans.pdf;

Dear MTWA

BHP is planning for the next stage of its ongoing safe and sustainable closure of the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia.

Production from the Stybarrow Field commenced in 2007 and ceased in 2015. Since that time the following cessation activities have been completed:

- All flowlines and gas lift lines were flushed and filled with treated seawater and production flowlines disconnected (except for an abandoned flowline which was blocked by sand and gas hydrate during production, which is disconnected, sealed and lying on the seabed).
- All production, gas injection and water injection wells were shut in and capped.
- The Stybarrow Venture FPSO was disconnected from the DTM and departed from the field in August 2015.

BHP consulted stakeholders in March 2022 on the first phase of decommissioning, these being activities for the proposed removal of the Stybarrow subsea equipment and ongoing field management activities until the equipment is removed. Feedback from stakeholders was considered in planning the Stybarrow Equipment Removal Environment Plan (EP), which was submitted to National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) in April 2022 for assessment.

BHP is now seeking stakeholder feedback on well plug and abandonment (P&A) and decommissioning activities, which are proposed to be managed under two separate Environment Plans, these being:

- Stybarrow P&A EP
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A summary of proposed activities to be managed under each EP follows and a fact sheet is attached providing more detail on infrastructure location and activity, as well as a summary of risks and associated management measures.

Activity Overview

Activities: Stybarrow P&A EP Stybarrow Field Deviation EP	<ul style="list-style-type: none"> • The P&A of 10 production/injection wells • Removal of the H4 flexible production flowline Proposed leave <i>in situ</i> : <ul style="list-style-type: none"> • The disconnectable turret mooring (DTM) anchors. Each anchor is buried, is approximately 6m x 6m x 3m, and weighs 11 tonnes. • Suction gravity bases for the riser holdbacks and water injection manifold. The riser bases embedded in the seabed, and clamps and chains will be removed. Riser bases are 4m in diameter and 7m high.
Petroleum title:	Production Licence WA-32-L
Activity location:	Approximately 53 km north-west of Exmouth, Western Australia
Infrastructure locations:	See attached Stakeholder Information Fact Sheet
Approximate water depth:	Approximately 810-850 m

Stybarrow End State Decommissioning Environment Plan

Estimate start date:	Earliest P&A start is 2024 calendar year, subject to approvals, MODU and vessel availability, and weather constraints. P&A must be completed no later than 30 September 2024.
Approximate duration:	Approximately 6 months
Vessels:	Semi submersible mobile offshore drilling unit (MODU) (Dynamic positioning) Offshore support vessels, such as general support/supply vessels, construction support vessels/installation vessels. Typically, two (but up to six) project vessels will be in the Operational Area during well P&A and subsea infrastructure removal activities.
Operational area:	A 500 m safety exclusion zone around the wells and a 1,500 m radius temporary Operational Area (precautionary) around the wells and subsea equipment for the duration of the activity.

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Please provide comment as soon as practicable. Comments can be made by email, letter or by phone (refer to attached Fact Sheet for contact details) by close of business on **24 June 2022**.

Regards,

BHP

1.16 Email sent to APPEA (27 May 2022)

Stybarrow End State Decommissioning Environment Plan

INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

Fri 5/27/2022 6:57 AM

To: apea@apea.com.au <apea@apea.com.au>

Cc: BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

📎 1 attachments (691 KB)

Fact Sheet - Stybarrow P&A and Decommissioning Environment Plans.pdf;

Dear APPEA

BHP is planning for the next stage of its ongoing safe and sustainable closure of the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia.

Production from the Stybarrow Field commenced in 2007 and ceased in 2015. Since that time the following cessation activities have been completed:

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Activity Overview

Activities: Stybarrow P&A EP Stybarrow Field Deviation EP	<ul style="list-style-type: none">• The P&A of 10 production/injection wells• Removal of the H4 flexible production flowline Proposed leave <i>in situ</i>: <ul style="list-style-type: none">• The disconnectable turret mooring (DTM) anchors. Each anchor is buried, is approximately 6m x 6m x 3m, and weighs 11 tonnes.• Suction gravity bases for the riser holdbacks and water injection manifold. The riser bases embedded in the seabed, and clamps and chains will be removed. Riser bases are 4m in diameter and 7m high.
Petroleum title:	Production Licence WA-32-L
Activity location:	Approximately 53 km north-west of Exmouth, Western Australia
Infrastructure locations:	See attached Stakeholder Information Fact Sheet
Approximate water depth:	Approximately 810-850 m

<https://outlook.office.com/mail/bhppetexternalaffairs@petroleumdeepwater.com/AAMkADg3MzRhZDk4LWFYITfNDIwNC05ZDU3LTlwMDM1ZWNmN...> 1/2

Stybarrow End State Decommissioning Environment Plan

Estimate start date:	Earliest P&A start is 2024 calendar year, subject to approvals, MODU and vessel availability, and weather constraints. P&A must be completed no later than 30 September 2024.
Approximate duration:	Approximately 6 months
Vessels:	Semi submersible mobile offshore drilling unit (MODU) (Dynamic positioning) Offshore support vessels, such as general support/supply vessels, construction support vessels/installation vessels. Typically, two (but up to six) project vessels will be in the Operational Area during well P&A and subsea infrastructure removal activities.
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Your Feedback

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As a relevant stakeholder you are invited to provide comments. The Environment Plan will contain a summary of all comments received. However, BHP will not use or disclose your personal information in the Environment Plan. Full transcripts of all correspondence will be included in a separate sensitive information part of the Environment Plan provided to NOPSEMA.

Please provide comment as soon as practicable. Comments can be made by email, letter or by phone (refer to attached Fact Sheet for contact details) by close of business on **24 June 2022**.

Regards,

BHP

1.17 Email to Western Deepwater Trawl Fishery (27 May 2022)

INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

Fri 5/27/2022 6:55 AM

Cc:BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

📎 1 attachments (691 KB)

Fact Sheet - Stybarrow P&A and Decommissioning Environment Plans.pdf;

Dear Western Deepwater Trawl Licence Holder

BHP is planning for the next stage of its ongoing safe and sustainable closure of the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia.

Production from the Stybarrow Field commenced in 2007 and ceased in 2015. Since that time the following cessation activities have been completed:

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Activity Overview

<p>Activities:</p> <p>Stybarrow P&A EP</p> <p>Stybarrow Field Deviation EP</p>	<ul style="list-style-type: none"> • The P&A of 10 production/injection wells • Removal of the H4 flexible production flowline <p>Proposed leave <i>in situ</i>:</p> <ul style="list-style-type: none"> • The disconnectable turret mooring (DTM) anchors. Each anchor is buried, is approximately 6m x 6m x 3m, and weighs 11 tonnes. • Suction gravity bases for the riser holdbacks and water injection manifold. The riser bases embedded in the seabed, and clamps and chains will be removed. Riser bases are 4m in diameter and 7m high.
Petroleum title:	Production Licence WA-32-L
Activity location:	Approximately 53 km north-west of Exmouth, Western Australia
Infrastructure locations:	See attached Stakeholder Information Fact Sheet
Approximate water depth:	Approximately 810-850 m

Stybarrow End State Decommissioning Environment Plan

Estimate start date:	Earliest P&A start is 2024 calendar year, subject to approvals, MODU and vessel availability, and weather constraints. P&A must be completed no later than 30 September 2024.
Approximate duration:	Approximately 6 months
Vessels:	Semi submersible mobile offshore drilling unit (MODU) (Dynamic positioning) Offshore support vessels, such as general support/supply vessels, construction support vessels/installation vessels. Typically, two (but up to six) project vessels will be in the Operational Area during well P&A and subsea infrastructure removal activities.
Operational area:	A 500 m safety exclusion zone around the wells and a 1,500 m radius temporary Operational Area (precautionary) around the wells and subsea equipment for the duration of the activity.

Commercial Fishing Overview

Stybarrow End State Decommissioning Environment Plan

Commercial fisheries have been identified as being relevant to the proposed activities on the basis of fishing licence overlap with the proposed Operational (activity) Area, as well as consideration of fishing effort data, fishing methods and water depth.

Commonwealth fisheries

There are four overlapping Commonwealth fisheries, of which the Western Deepwater Trawl Fishery has been identified as relevant based on the identification criteria. BHP will consult representative organisations and licence holders entitled to fish in the Operational Area.

State fisheries

There are six overlapping State fisheries, of which the following fisheries have been identified as being relevant based on the identification criteria. Individual licence holders in these fisheries will be consulted.

- Mackerel Managed Fishery (Area 3)
- West Coast Deep Sea Crustacean Managed Fishery

The following government departments and organisations will also be consulted on behalf of licence holders entitled to fish in the Operational Area:

Commonwealth Fisheries:

- Australian Fisheries Management Authority
- Australian Southern Bluefin Tuna Industry Association on behalf of licence holders in the Southern Bluefin Tuna and Western Skipjack Tuna Fisheries
- Department of Agriculture, Water and the Environment
- Commonwealth Fisheries Association on behalf of licence holders in the Western Deepwater Trawl, Western Tuna and Billfish and Western Skipjack Tuna Fisheries
- Tuna Australia on behalf of licence holders in the Western Tuna and Billfish Fishery

State Fisheries and recreational fishing:

- Department of Primary Industry and Resources
- Western Australian Fishing Industry Council
- Pearl Producers Association
- Recfishwest

Your Feedback

Your feedback on the proposed activity and our response will be provided to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), as is required under the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009.

As a relevant stakeholder you are invited to provide comments. The Environment Plan will contain a summary of all comments received. However, BHP will not use or disclose your personal information in the Environment Plan. Full transcripts of all correspondence will be included in a separate sensitive information part of the Environment Plan provided to NOPSEMA.

Please provide comment as soon as practicable. Comments can be made by email, letter or by phone (refer to attached Fact Sheet for contact details) by close of business on **24 June 2022**.

Regards,

BHP

1.18 Email sent to Australian Border Force (27 May 2022)

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Stybarrow End State Decommissioning Environment Plan

INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

BHP PET External Affairs <bhppetexternalaffairs@petroleumdeepwater.com>

Fri 5/27/2022 5:38 AM

To:shopfrontchap@abf.gov.au <shopfrontchap@abf.gov.au>

Cc:BHP PET External Affairs <bhppetexternalaffairs@petroleumdeepwater.com>

📎 1 attachments (691 KB)

Fact Sheet - Stybarrow P&A and Decommissioning Environment Plans.pdf;

Dear Australian Border Force

BHP is planning for the next stage of its ongoing safe and sustainable closure of the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia.

Production from the Stybarrow Field commenced in 2007 and ceased in 2015. Since that time the following cessation activities have been completed:

- All flowlines and gas lift lines were flushed and filled with treated seawater and production flowlines disconnected (except for an abandoned flowline which was blocked by sand and gas hydrate during production, which is disconnected, sealed and lying on the seabed).
- All production, gas injection and water injection wells were shut in and capped.
- The Stybarrow Venture FPSO was disconnected from the DTM and departed from the field in August 2015.

BHP consulted stakeholders in March 2022 on the first phase of decommissioning, these being activities for the proposed removal of the Stybarrow subsea equipment and ongoing field management activities until the equipment is removed. Feedback from stakeholders was considered in planning the Stybarrow Equipment Removal Environment Plan (EP), which was submitted to National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) in April 2022 for assessment.

BHP is now seeking stakeholder feedback on well plug and abandonment (P&A) and decommissioning activities, which are proposed to be managed under two separate Environment Plans, these being:

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A summary of proposed activities to be managed under each EP follows and a fact sheet is attached providing more detail on infrastructure location and activity, as well as a summary of risks and associated management measures.

Activity Overview

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Petroleum title:	Production Licence WA-32-L
Activity location:	Approximately 53 km north-west of Exmouth, Western Australia
Infrastructure locations:	See attached Stakeholder Information Fact Sheet
Approximate water depth:	Approximately 810-850 m

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Stybarrow End State Decommissioning Environment Plan

Estimate start date:	Earliest P&A start is 2024 calendar year, subject to approvals, MODU and vessel availability, and weather constraints. P&A must be completed no later than 30 September 2024.
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Vessels:	Semi submersible mobile offshore drilling unit (MODU) (Dynamic positioning) Offshore support vessels, such as general support/supply vessels, construction support vessels/installation vessels. Typically, two (but up to six) project vessels will be in the Operational Area during well P&A and subsea infrastructure removal activities.
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Your Feedback

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Regards,

BHP

1.19 Email sent to Commonwealth Fisheries Association (CFA) (27 May 2022)

Stybarrow End State Decommissioning Environment Plan

INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

Fri 5/27/2022 7:00 AM

Cc:BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

📎 1 attachments (691 KB)

Fact Sheet - Stybarrow P&A and Decommissioning Environment Plans.pdf;

Dear Commercial Fishery Association

BHP is planning for the next stage of its ongoing safe and sustainable closure of the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia.

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Petroleum title:	Production Licence WA-32-L
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Stybarrow End State Decommissioning Environment Plan

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Commercial Fishing Overview

Stybarrow End State Decommissioning Environment Plan

Commercial fisheries have been identified as being relevant to the proposed activities on the basis of fishing licence overlap with the proposed Operational (activity) Area, as well as consideration of fishing effort data, fishing methods and water depth.

Commonwealth fisheries

There are four overlapping Commonwealth fisheries, of which the Western Deepwater Trawl Fishery has been identified as relevant based on the identification criteria. BHP will consult representative organisations and licence holders entitled to fish in the Operational Area.

State fisheries

There are six overlapping State fisheries, of which the following fisheries have been identified as being relevant based on the identification criteria. Individual licence holders in these fisheries will be consulted.

- Mackerel Managed Fishery (Area 3)
- West Coast Deep Sea Crustacean Managed Fishery

The following government departments and organisations will also be consulted on behalf of licence holders entitled to fish in the Operational Area:

Commonwealth Fisheries:

- Australian Fisheries Management Authority
- Australian Southern Bluefin Tuna Industry Association on behalf of licence holders in the Southern Bluefin Tuna and Western Skipjack Tuna Fisheries
- Department of Agriculture, Water and the Environment
- Commonwealth Fisheries Association on behalf of licence holders in the Western Deepwater Trawl, Western Tuna and Billfish and Western Skipjack Tuna Fisheries
- Tuna Australia on behalf of licence holders in the Western Tuna and Billfish Fishery

State Fisheries and recreational fishing:

- Department of Primary Industry and Resources
- Western Australian Fishing Industry Council
- Pearl Producers Association
- Recfishwest

Your Feedback

Your feedback on the proposed activity and our response will be provided to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), as is required under the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009.

As a relevant stakeholder you are invited to provide comments. The Environment Plan will contain a summary of all comments received. However, BHP will not use or disclose your personal information in the Environment Plan. Full transcripts of all correspondence will be included in a separate sensitive information part of the Environment Plan provided to NOPSEMA.

Please provide comment as soon as practicable. Comments can be made by email, letter or by phone (refer to attached Fact Sheet for contact details) by close of business on **24 June 2022**.

Regards,

BHP

1.20 Email sent to Ningaloo Coast World Heritage Advisory Committee (NCWHAC) (27 May 2022)

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INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

Fri 5/27/2022 6:43 AM

To: [REDACTED]@dbca.wa.gov.au [REDACTED]@dbca.wa.gov.au

Cc: BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

📎 1 attachments (691 KB)

Fact Sheet - Stybarrow P&A and Decommissioning Environment Plans.pdf;

Dear Ningaloo Coast World Heritage Advisory Committee

BHP is planning for the next stage of its ongoing safe and sustainable closure of the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia.

Production from the Stybarrow Field commenced in 2007 and ceased in 2015. Since that time the following cessation activities have been completed:

- All flowlines and gas lift lines were flushed and filled with treated seawater and production flowlines disconnected (except for an abandoned flowline which was blocked by sand and gas hydrate during production, which is disconnected, sealed and lying on the seabed).
- All production, gas injection and water injection wells were shut in and capped.
- The Stybarrow Venture FPSO was disconnected from the DTM and departed from the field in August 2015.

BHP consulted stakeholders in March 2022 on the first phase of decommissioning, these being activities for the proposed removal of the Stybarrow subsea equipment and ongoing field management activities until the equipment is removed. Feedback from stakeholders was considered in planning the Stybarrow Equipment Removal Environment Plan (EP), which was submitted to National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) in April 2022 for assessment.

BHP is now seeking stakeholder feedback on well plug and abandonment (P&A) and decommissioning activities, which are proposed to be managed under two separate Environment Plans, these being:

- Stybarrow P&A EP
- Stybarrow Field Deviation EP

A summary of proposed activities to be managed under each EP follows and a fact sheet is attached providing more detail on infrastructure location and activity, as well as a summary of risks and associated management measures.

Activity Overview

Activities: Stybarrow P&A EP Stybarrow Field Deviation EP	<ul style="list-style-type: none"> • The P&A of 10 production/injection wells • Removal of the H4 flexible production flowline <p>Proposed leave <i>in situ</i>:</p> <ul style="list-style-type: none"> • The disconnectable turret mooring (DTM) anchors. Each anchor is buried, is approximately 6m x 6m x 3m, and weighs 11 tonnes. • Suction gravity bases for the riser holdbacks and water injection manifold. The riser bases embedded in the seabed, and clamps and chains will be removed. Riser bases are 4m in diameter and 7m high.
Petroleum title:	Production Licence WA-32-L
Activity location:	Approximately 53 km north-west of Exmouth, Western Australia
Infrastructure locations:	See attached Stakeholder Information Fact Sheet
Approximate water depth:	Approximately 810-850 m

Stybarrow End State Decommissioning Environment Plan

Estimate start date:	Earliest P&A start is 2024 calendar year, subject to approvals, MODU and vessel availability, and weather constraints. P&A must be completed no later than 30 September 2024.
Approximate duration:	Approximately 6 months
Vessels:	Semi submersible mobile offshore drilling unit (MODU) (Dynamic positioning) Offshore support vessels, such as general support/supply vessels, construction support vessels/installation vessels. Typically, two (but up to six) project vessels will be in the Operational Area during well P&A and subsea infrastructure removal activities.
Operational area:	A 500 m safety exclusion zone around the wells and a 1,500 m radius temporary Operational Area (precautionary) around the wells and subsea equipment for the duration of the activity.

Your Feedback

Your feedback on the proposed activity and our response will be provided to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), as is required under the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009.

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Please provide comment as soon as practicable. Comments can be made by email, letter or by phone (refer to attached Fact Sheet for contact details) by close of business on **24 June 2022**.

Regards,

BHP

1.21 Email sent to Shire of Exmouth (27 May 2022)

INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

Fri 5/27/2022 8:27 AM

T [REDACTED]@exmouth.wa.gov.au [REDACTED]@exmouth.wa.gov.au>

Cc:BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

📎 1 attachments (686 KB)

Fact Sheet - Stybarrow P&A and Decommissioning Environment Plans.pdf;

Dear Shire of Exmouth

BHP is planning for the next stage of its ongoing safe and sustainable closure of the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia.

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Activity Overview

<p>Activities:</p> <p>Stybarrow P&A EP</p> <p>Stybarrow Field Deviation EP</p>	<ul style="list-style-type: none"> • The P&A of 10 production/injection wells • Removal of the H4 flexible production flowline <p>Proposed leave <i>in situ</i>:</p> <ul style="list-style-type: none"> • The disconnectable turret mooring (DTM) anchors. Each anchor is buried, is approximately 6m x 6m x 3m, and weighs 11 tonnes. • Suction gravity bases for the riser holdbacks and water injection manifold. The riser bases embedded in the seabed, and clamps and chains will be removed. Riser bases are 4m in diameter and 7m high.
Petroleum title:	Production Licence WA-32-L
Activity location:	Approximately 53 km north-west of Exmouth, Western Australia
Infrastructure locations:	See attached Stakeholder Information Fact Sheet
Approximate water depth:	Approximately 810-850 m

Stybarrow End State Decommissioning Environment Plan

Estimate start date:	Earliest P&A start is 2024 calendar year, subject to approvals, MODU and vessel availability, and weather constraints. P&A must be completed no later than 30 September 2024.
Approximate duration:	Approximately 6 months
Vessels:	Semi submersible mobile offshore drilling unit (MODU) (Dynamic positioning) Offshore support vessels, such as general support/supply vessels, construction support vessels/installation vessels. Typically, two (but up to six) project vessels will be in the Operational Area during well P&A and subsea infrastructure removal activities.
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Please provide comment as soon as practicable. Comments can be made by email, letter or by phone (refer to attached Fact Sheet for contact details) by close of business on **24 June 2022**.

Regards,

BHP

1.22 Email sent Exmouth Community Liaison Group (27 May 2022)

 1 attachments (686 KB)

Fact Sheet - Stybarrow P&A and Decommissioning Environment Plans.pdf;

Dear Exmouth Community Reference Group members

BHP is planning for the next stage of its ongoing safe and sustainable closure of the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia.

Production from the Stybarrow Field commenced in 2007 and ceased in 2015. Since that time the following cessation activities have been completed:

- All flowlines and gas lift lines were flushed and filled with treated seawater and production flowlines disconnected (except for an abandoned flowline which was blocked by sand and gas hydrate during production, which is disconnected, sealed and lying on the seabed).
- All production, gas injection and water injection wells were shut in and capped.
- The Stybarrow Venture FPSO was disconnected from the DTM and departed from the field in August 2015.

BHP consulted stakeholders in March 2022 on the first phase of decommissioning, these being activities for the proposed removal of the Stybarrow subsea equipment and ongoing field management activities until the equipment is removed. Feedback from stakeholders was considered in planning the Stybarrow Equipment Removal Environment Plan (EP), which was submitted to National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) in April 2022 for assessment.

BHP is now seeking stakeholder feedback on well plug and abandonment (P&A) and decommissioning activities, which are proposed to be managed under two separate Environment Plans, these being:

- Stybarrow P&A EP
- Stybarrow Field Deviation EP

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Stybarrow End State Decommissioning Environment Plan

A summary of proposed activities to be managed under each EP follows and a fact sheet is attached providing more detail on infrastructure location and activity, as well as a summary of risks and associated management measures.

Activity Overview

Activities: Stybarrow P&A EP Stybarrow Field Deviation EP	<ul style="list-style-type: none"> The P&A of 10 production/injection wells Removal of the H4 flexible production flowline
	Proposed leave <i>in situ</i>: <ul style="list-style-type: none"> The disconnectable turret mooring (DTM) anchors. Each anchor is buried, is approximately 6m x 6m x 3m, and weighs 11 tonnes. Suction gravity bases for the riser holdbacks and water injection manifold. The riser bases embedded in the seabed, and clamps and chains will be removed. Riser bases are 4m in diameter and 7m high.
Petroleum title:	Production Licence WA-32-L
Activity location:	Approximately 53 km north-west of Exmouth, Western Australia
Infrastructure locations:	See attached Stakeholder Information Fact Sheet
Approximate water depth:	Approximately 810-850 m
Estimate start date:	Earliest P&A start is 2024 calendar year, subject to approvals, MODU and vessel availability, and weather constraints. P&A must be completed no later than 30 September 2024.
Approximate duration:	Approximately 6 months
Vessels:	Semi submersible mobile offshore drilling unit (MODU) (Dynamic positioning) Offshore support vessels, such as general support/supply vessels, construction support vessels/installation vessels. Typically, two (but up to six) project vessels will be in the Operational Area during well P&A and subsea infrastructure removal activities.
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Your Feedback

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Please provide comment as soon as practicable. Comments can be made by email, letter or by phone (refer to attached Fact Sheet for contact details) by close of business on **24 June 2022**.

Regards,

BHP

1.23 Email sent Exmouth Game Fishing Club (27 May 2022)

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Stybarrow End State Decommissioning Environment Plan

INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

Fri 5/27/2022 7:29 AM

To:secretary@egfc.com.au <secretary@egfc.com.au>

Cc:BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

1 attachments (691 KB)

Fact Sheet - Stybarrow P&A and Decommissioning Environment Plans.pdf;

Dear Exmouth Game Fishing Club

BHP is planning for the next stage of its ongoing safe and sustainable closure of the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia.

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Infrastructure locations:	See attached Stakeholder Information Fact Sheet
Approximate water depth:	Approximately 810-850 m

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Stybarrow End State Decommissioning Environment Plan

Estimate start date:	Earliest P&A start is 2024 calendar year, subject to approvals, MODU and vessel availability, and weather constraints. P&A must be completed no later than 30 September 2024.
Approximate duration:	Approximately 6 months
Vessels:	Semi submersible mobile offshore drilling unit (MODU) (Dynamic positioning) Offshore support vessels, such as general support/supply vessels, construction support vessels/installation vessels. Typically, two (but up to six) project vessels will be in the Operational Area during well P&A and subsea infrastructure removal activities.
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Regards,

BHP

1.24 Email sent to WA Game Fishing Association (27 May 2022)

Stybarrow End State Decommissioning Environment Plan

INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

Fri 5/27/2022 7:07 AM

To: president@wagfa.asn.au <president@wagfa.asn.au>

Cc: BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

📎 1 attachments (691 KB)

Fact Sheet - Stybarrow P&A and Decommissioning Environment Plans.pdf;

Dear WA GFA

BHP is planning for the next stage of its ongoing safe and sustainable closure of the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia.

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Stybarrow End State Decommissioning Environment Plan

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Regards,

BHP

1.25 Email sent to Cape Conservation Group (27 May 2022)

Dear Cape Conservation Group

BHP is planning for the next stage of its ongoing safe and sustainable closure of the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia.

Production from the Stybarrow Field commenced in 2007 and ceased in 2015. Since that time the following cessation activities have been completed:

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Stybarrow End State Decommissioning Environment Plan

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<p>Petroleum title:</p>	<p>Production Licence WA-32-L</p>
<p>Activity location:</p>	<p>Approximately 53 km north-west of Exmouth, Western Australia</p>
<p>Infrastructure locations:</p>	<p>See attached Stakeholder Information Fact Sheet</p>
<p>Approximate water depth:</p>	<p>Approximately 810-850 m</p>
<p>Estimate start date:</p>	<p>Earliest P&A start is 2024 calendar year, subject to approvals, MODU and vessel availability, and weather constraints. P&A must be completed no later than 30 September 2024.</p>
<p>Approximate duration:</p>	<p>Approximately 6 months</p>
<p>Vessels:</p>	<p>Semi submersible mobile offshore drilling unit (MODU) (Dynamic positioning)</p> <p>Offshore support vessels, such as general support/supply vessels, construction support vessels/installation vessels. Typically, two (but up to six) project vessels will be in the Operational Area during well P&A and subsea infrastructure removal activities.</p>
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Your Feedback

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Stybarrow End State Decommissioning Environment Plan

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Regards,

BHP

1.26 Presentation to Exmouth Community Liaison Group (21 September 2022)



INTRODUCTION

Disclaimer, important notes and assumptions

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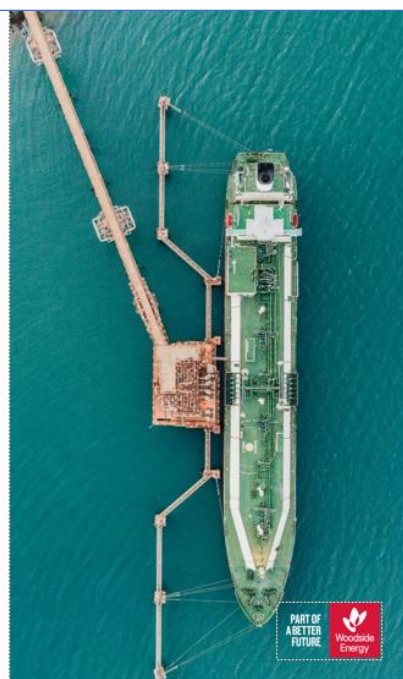
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EXMOUTH COMMUNITY REFERENCE GROUP AGENDA

- Operations update
- Activity update
- Environment Plans
- Community partnerships



ENVIRONMENT PLANS

Stybarrow Decommissioning

- [Stybarrow](#) ceased production in 2015 and planning is underway for decommissioning in 2023/24
- Decommissioning activities will be covered by three Environment Plans, all currently under assessment

Decommissioning and Field Management (Cth)

- Submitted for assessment April 2022
- Proposal to remove subsea equipment including wellheads, flexibles, DTM, moorings and ancillary subsea equipment

Plug & Abandonment (Cth)


- Submitted for assessment August 2022
- Proposal to plug and abandon 10 [Stybarrow](#) wells

End State Decommissioning (Cth)

- Submitted for assessment July 2022
- Proposal to leave *in situ* anchors, suction bases and a historical wellhead that was unable to be removed previously

2. Activity Update (February 2023)

2.1 Activity Update - Information Sheet (16 February 2023)



STAKEHOLDER CONSULTATION

INFORMATION SHEET

February 2023

ACTIVITY UPDATE – STYBARROW DECOMMISSIONING ENVIRONMENT PLANS

EXMOUTH PLATEAU SUB-BASIN, NORTH-WEST AUSTRALIA

Woodside consults relevant persons in the course of preparing an Environment Plan (EP) to notify them, obtain their input and to assist Woodside to confirm current measures or identify additional measures, if any, that could be taken to lessen or avoid potential adverse effects of the proposed activity on the environment. This is the intended outcome of consultation.

Woodside's aim is to ensure the activity is carried out in a manner that is consistent with the principles of Ecologically Sustainable Development (ESD), by which the environmental impacts and risks of the activity are reduced to As Low As Reasonably Practicable (ALARP) and of an acceptable level. We want 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.

Overview

Woodside is planning to undertake subsea decommissioning activities for the Stybarrow field (previously operated by BHP Petroleum Pty Ltd (BHP)), which is located in Commonwealth waters in permit area WA-32-L, approximately 53 km north-west of Exmouth, Western Australia and in water depths of approximately 810 - 850m (**Figure 1**).

Regulatory approvals are being sought for the following activities:

Stybarrow plug and production (P&A) EP

- Well P&A of the 10 productions/injection wells by placing cement plugs in the wells to permanently prevent hydrocarbon release.
- Potential unblocking of the H4 flowline, if deemed feasible.

Stybarrow Decommissioning and Field Management EP

- Removal of subsea equipment including wellheads, trees, manifolds, risers, flexible flowlines, umbilicals.
- Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L. It is intended that the DTM will be towed to WA-12-L, adjacent to the Woodside-operated Griffin field, in water depths of about 120 m and, that the DTM would be placed directly onto a vessel, not placed on the seabed.
- Ongoing field management activities (equipment monitoring and inspection).

Stybarrow Field Deviation EP

- Proposed leave *in situ* of the nine DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be removed following its drilling and abandonment in 2003.

P&A activities are anticipated to take approximately 6-9 months to complete, removal activities are anticipated to take approximately 6 months to complete and DTM removal activities are anticipated to take approximately 2-4 weeks to complete.

Decommissioning of the Stybarrow field is planned to be undertaken following acceptance of the EP, with work anticipated to commence around late 2023, commencing with P&A pre-execution activities, subject to vessel availability and weather constraints.

The P&A activities are required to be completed by 30 September 2024 and equipment removal completed by 31 March 2025, as per NOPSEMA General Direction 833.

Following removal, Woodside proposes to dispose of equipment onshore in accordance with applicable requirements, assessing all options to reduce waste through reuse or recycling of recovered equipment.

The equipment locations and proposed activity or end state is summarised at **Table 2**.

EPs for these activities have previously been submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for assessment under the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009*.

This Activity Update provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided.

Feedback from relevant persons as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA for further assessment.

Stybarrow Decommissioning Background

The Stybarrow development was in production from 2007 to 2015 and consisted of the Stybarrow floating production, storage and offloading (FPSO) facility and its moorings, subsea facilities including 10 subsea wells (production and water/gas injectors), the associated trees, manifolds, risers, flowlines, umbilicals and the DTM buoy which connected the FPSO to the subsea infrastructure.

Since 2015 the following activities have been completed:

- All flowlines and gas lift lines were flushed and filled with treated seawater and production flowlines disconnected, with the exception of the H4 flowline which was blocked by sand and hydrates during production. The H4 flowline is disconnected, sealed and lying on the seabed. Hydrates are ice like solids that form when water and natural gas combine at high pressure and low temperatures. They are stable and pose no impact to the environment.

- All production, gas and water injection wells were shut in and capped.
- The Stybarrow Venture FPSO was disconnected from the DTM and departed the field in August 2015.

During an echo sounding survey of the facilities in 2016, the DTM was found to have lost buoyancy and is now lying on the seabed at a depth of approximately 820 meters. Since then, the buoyancy modules from the risers have been removed to eliminate the risk of floating equipment coming to the sea surface.

Communications with mariners

Well P&A: The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centers within WA-32-L. It is intended that a temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.

Removal activities: The Operational Area includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads. It is intended that a temporary 500 m exclusion zone will apply around the Construction Support Vessel and the associated project vessels during removal activities.

The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. It is intended that a temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.

Commercial fishers and other marine users are permitted to use but should take care when entering the Operational Area and remain clear of the Exclusion Zone.

It is intended that subsea infrastructure which is proposed to be left in situ will continue to be marked, and infrastructure proposed to be removed will continue to be marked on navigation charts until it is removed.

It is anticipated that vessels will operate 24 hours per day for the duration of the activities. The duration of these activities is subject to change due to project schedule requirements, vessel availability, weather or unforeseen circumstances.



Typical subsea cutting activity

Decommissioning assessment

Woodside has undertaken an assessment to identify potential risks to the marine environment and relevant persons, considering timing, duration, location and potential impacts arising from the planned activities. A number of mitigation and management measures will be implemented and are summarised in **Table 3**. Further details will be provided in the revised EPs.

In preparing the EP revisions, Woodside's intent is to minimise environmental and social impacts associated with the proposed activities, and we are seeking comments and input from relevant persons to inform our decision making and for the intended outcome of consultation (see above).

Joint Venture

Woodside Energy (Australia) Pty Ltd is operator and sole titleholder of WA-32-L.

Woodside Energy (Australia) Pty Ltd is operator of WA-12-L SR on behalf of Joint Venture participant Mobil Australia Resources Company Pty Ltd.

We welcome your feedback by 17 March 2023.

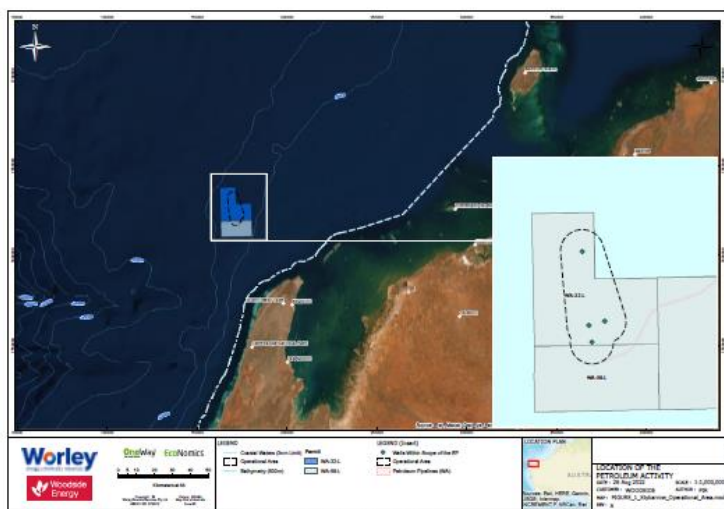


Figure 1. Stybarrow Location Map



Typical subsea equipment recovery activity

Stybarrow End State Decommissioning Environment Plan

Table 1. Activity summary

Stybarrow Decommissioning activities	Well P&A	Equipment Removal	DTM Removal	Stybarrow Field Deviation EP
	Stybarrow Plug and Abandonment EP	Stybarrow Decommissioning and Field Management EP		
Summary	<p>Permanent P&A of 10 wells (6 production wells, 3 water injection wells and 1 gas injection well).</p> <p>Potential removal of wellhead and subsea trees, either by MODU or CSV.</p> <p>Potential unblocking of the H4 flowline, if deemed feasible.</p>	<p>Removal of subsea equipment including wellheads, trees, manifolds, risers, flexible flowlines, umbilicals.</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	<p>Removal of the DTM and its moorings.</p> <p>Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L. In this instance, it will be towed to WA-12-L, adjacent to the Woodside-operated Griffin field.</p>	<p>Proposal to leave in situ of 9 suction piles (largely buried), 9 drag anchors (buried) and the historical Eskdale-1 wellhead</p>
Commencement date	<p>Earliest P&A start is around Q4 2023, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed no later than 30 September 2024, pursuant to General Direction 833.</p>	<p>Earliest facilities removal is estimated to be Q4 2023, subject to approvals, MODU vessel availability and weather constraints. Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.</p>	<p>Earliest DTM recovery is estimated to be Q4 2023, subject to approvals, Heavy Lift vessel (HLV) availability and weather constraints. Removal must be completed no later than 31 March 2025 pursuant to General Direction 833.</p>	N/A - no activities
Simultaneous Operations (SIMOPS)	Potential SIMOPs may occur with subsea infrastructure and DTM removal activities if vessel and equipment availabilities permit.			N/A (no activities)
Petroleum Title	WA-32-L	WA-32-L	WA-32-L WA-12-L	WA-32-L
Operational Area	The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centers within WA-32-L.	The Operational Area includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads.		N/A
Exclusion Zones	A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	<p>The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed.</p> <p>A temporary 500 m exclusion zone will apply around the Construction Support Vessel and the associated project vessels during removal activities.</p>	A temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.	N/A
Estimated duration	<p>-6 - 9 months with the following approximate activity breakdowns:</p> <ul style="list-style-type: none"> Preparatory activities (-4 - 7 days per well) P&A (-18 - 24 days per well) Removal of Well Infrastructure (-1 - 5 days per well) Recovery of moorings and ancillary equipment (-1 - 2 days per well) 	<p>-4-6 months with the following approximate activity breakdowns:</p> <ul style="list-style-type: none"> Flexible flowline recovery (-2 months) Seabed equipment recovery (-1-2 months) H4 flowline recovery (-1-2 months) 	<p>Up to -1 month:</p> <ul style="list-style-type: none"> -1-2 weeks preparatory activities (disconnection of risers, mooring chains) -1-2 weeks for recovery, in WA-32L or WA-12L 	N/A (no activities)
Location and Water depth	-53 km north west of Exmouth, 810-85 m water depth	-53 km north west of Exmouth, 810-850 m water depth	71 km north east of WA-32-L, 120 m water depth	-53 km north west of Exmouth, 810-85 m water depth

Stybarrow End State Decommissioning Environment Plan

Infrastructure	<p>6 x production wells 3 x water injection wells 1 x gas injection well</p> <p>The P&A covers the following optional scopes that may be conducted on the MODU or otherwise be covered during the facilities removal scope:</p> <ul style="list-style-type: none"> Removal of well infrastructure above the mudline including wellheads and xmas trees. Intervention from the MODU to unblock sand, hydrates and hydrocarbons from inside the H4 flowline, if determined feasible, prior to removal. 	<p>9 x DTM mooring legs/chains 9 support buoys 9 flexible risers 8 flexible production flowlines 4 gas injection/lift flowlines 2 water injection flowlines All flying leads, jumpers and umbilicals 1 water injection manifold 7 subsea distribution units 15 anode skids 10 wellheads and trees</p> <p>The EP includes ongoing field maintenance activities as required until equipment is removed.</p>	<p>DTM structure, steel construction, conical shape, -15 m diameter, -15 m height, -800 tonnes (in air)</p>	<p>Leave in situ proposed for: 9 suction piles (embedded in seabed) 9 drag anchors (buried) The historical Eskdale -1 wellhead</p> <p>Contaminant assessments have been conducted for the materials within these items (steel, concrete, cement) and they pose no short-term or long-term risk to the environment.</p>
Vessels	<p>Semi Submersible Mobile Offshore Drilling Unit (MODU). MODU supported by 2 - 3 offshore support vessels.</p>	<p>Construction Support Vessel (CSV).</p>	<p>Heavy Lift Vessel (HLV) with dynamic positioning (DP). Anchor handling tugs (AHTs) required to support the towing of the DTM to the shallower water location (if required), to support the HLV.</p>	N/A
Distance to nearest marine park/mature reserve	<p>Offshore support vessels, such as general support/supply vessels, construction support/installation vessels. Typically two (but up to six) project vessels may be in the Operational Area during well P&A and subsea infrastructure removal activities</p> <p>5 km to Gascoyne Commonwealth Marine Park 24 km to Ningaloo Marine Park (Commonwealth) 36 km to Ningaloo Marine Park (State) 45 km to Murion Islands Marine Management Area</p>			

Stybarrow End State Decommissioning Environment Plan

Table 2. Approximate location and activity/end state

Subsea Infrastructure	Easting	Northing	
DTM buoy	170873.2	7624770.8	Remove
DTM mooring legs – chain and wire	Between anchors and DTM buoy		Remove
Mooring Anchor 1	172172.4	7624323.5	Leave <i>in situ</i> proposed, with chains removed Anchors are 11 tonne Stevpris Mk5 Vryhof drag anchors, -6m x 6m x 3m, constructed from mild steel
Mooring Anchor 2	172215.2	7624441.7	
Mooring Anchor 3	172237.1	7624561.1	
Mooring Anchor 4	170594.8	7626195	
Mooring Anchor 5	170489.2	7626161.1	
Mooring Anchor 6	170372.9	7626127.5	
Mooring Anchor 7	169759.4	7623909.3	
Mooring Anchor 8	169828.7	7623775.8	
Mooring Anchor 9	169943.1	7623715.9	
Mooring support buoys	With mooring legs		Remove
Dynamic umbilical riser base	171433.8	7625113.9	Leave <i>in situ</i> proposed, with chains and clamps removed.
Water Injection riser base	171491.8	7624359.1	
H4 Gas lift riser base	171256.2	7624136.9	Riser bases are -4m in diameter, -7m high embedded in the seabed with -0.75m protruding, constructed from mild steel
EG1 gas injection riser base	171121.0	7625533.9	
H4 production riser base	171080.4	7624061.0	
H3 production riser base	170894.3	7624028.6	
H2 production riser base	170704.2	7624040.9	
H1 production riser base	170526.5	7624100.2	
EH1 production riser base	170921.2	7625578.0	
Flexible production flowlines	Between risers and drill centres		Remove
H4 flowline	Adjacent to H4 riser and drill centre		Remove – flowline was blocked with sand, hydrocarbons and hydrates during operation and attempts to unblock prior to removal will be made
Gas Injection/lift flowlines	Between risers and drill centres		Remove
Water Injection flowlines			Remove
Umbilicals			Remove
Jumpers	With drill centres		Remove
Water Injection manifold	171486.5	7624333.0	Remove
Riser base SDU	171223.8	7624891.4	Remove
SDU A	173159.3	7622671.3	Remove
SDU B	171004.5	7622008.6	Remove
SDU C	171443.1	7619702.8	Remove
SDU D	170065.5	7632321.3	Remove
DC-A UTA	173183.0	7622582.1	Remove
DC-B UTA	171019.6	7621973.9	Remove
Anode skids	Various		Remove
Stybarrow 5 (I-3) well	173119.0	7622683.9	P&A of 10 wells. Removal of wellhead and subsea trees, either by MODU or CSV
Stybarrow 6 (I-2) well	173143.9	7622636.2	
Stybarrow 12 (H-5) well	173172.8	76225560.7	
Stybarrow 9 (I-1) well	171032.3	7621985.6	
Stybarrow 10 (H-3) well	170958.1	7621964.1	
Stybarrow 11 (H-4) well	170980.5	7622056.3	
Stybarrow 7 (H-2) well	171413.3	7619728.6	
Stybarrow 8 (H-1) well	171403.1	7619659.9	
Eskdale 3 (EH1) well	170065.1	7632345.3	
Eskdale 4 (EG1) well	170024.5	7632318.3	
Eskdale-1 well	170896.6	7634287.2	Well was plugged and abandoned in 2003 following drilling. Wellhead removal unsuccessful – proposed to remain <i>in situ</i>

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Environment That May Be Affected (EMBA)

The environment that may be affected (EMBA) is the largest spatial extent where unplanned events could potentially have an environmental consequence. For this EP, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release from both the direct and indirect activities the subject of the EP. The worst-case credible spill scenario for these EPs is loss of well containment during the well P&A activities.

The EMBA does not represent the predicted impact of the highly unlikely oil release. Rather, the EMBA represents the merged area of many possible paths that a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release.

This means that in the highly unlikely event that a hydrocarbon release does occur, the entire EMBA will not be affected and the specific and minimal part of the EMBA that is affected will only be known at the time of the release.

There are three potential EMBA's for this EP, reflecting the activities and the different locations that the activity could occur.

Each of the EMBA's are presented in Figure 2 below and summarised as:

- **Loss of Well Containment EMBA :** Primary activity of the Well P&A EP – P&A of 10 production/injection wells by a MODU.
- **Facilities Equipment Removal EMBA :** Primary activity for the Stybarrow Decommissioning and Field Management EP – Recovery of subsea infrastructure using a CSV.
- **DTM Tow Location EMBA :** Option for the removal of the DTM, an activity within the Stybarrow Decommissioning and Field Management EP – DTM towed from its current location approximately 65 km to permit area WA-12-L SR (adjacent to Griffin permit area) for recovery by the HLV in shallow water. This EMBA has been adopted from the worst-case spill from a vessel collision at the Griffin removal location.

Given the buried nature of the infrastructure proposed to remain in situ and the absence of related activities for the infrastructure, the EMBA for this EP is the footprint of the equipment.



Figure 2. Environment that may be affected (EMBA) for the proposed activity.

Mitigation and Management Measures

Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from the decommissioning activities considering timing, duration, location.

A number of mitigation and management measures for the removal of the RTM are outlined in **Table 3**. Further details will be provided in the EP.

Table 3. Summary of key risks and/or Impacts and management measures for the Stybarrow Decommissioning activities. Key risks and/or Impacts and management measure apply to activities occurring within the title area and tow location.

Potential Impact/ Risk	Description of Source of Potential Impact/ Risk	Description of Potential Impacts	Proposed Mitigation and/ or Management Measure
Planned			
Physical presence and Interactions with other marine users	<ul style="list-style-type: none"> The activities will be undertaken using a range of project vessels, namely a MODU, CSV and a HLV, along with general support project vessels. A 500 m petroleum safety zone will apply around the equipment locations. If the DTM is towed out of title, a 500 m exclusion zone will apply to the DTM and project vessels during tow and lifting. Presence of vessels in the safety and exclusion zones has the potential to result in interaction with third-party marine users. 	<ul style="list-style-type: none"> Interference with commercial shipping. Interference with commercial fishing activity. Displacement of recreational fishing activity. Interaction with existing oil and gas infrastructure. 	<ul style="list-style-type: none"> 500 m petroleum safety zone maintained around equipment until removal. 500 m exclusion zone established around the MODU and project vessels. Activity support vessel(s) to communicate with third-party vessels to assist in maintaining the petroleum safety zone/ exclusion zones. Consultation with relevant persons for the consultation outcomes.
Physical presence of infrastructure on seabed causing seabed disturbance Interference and displacement of other marine users	<ul style="list-style-type: none"> Excess marine growth may need to be removed from the equipment prior to removal using high-pressure water jetting. Equipment deburial and short-term wet parking of infrastructure may be required. 	<ul style="list-style-type: none"> Removal activities may result in localised, temporary seabed disturbance from resuspension of sediments. Marine growth removal may result in highly localised seabed disturbance as debris deposits on the seabed. Interference or displacement of commercial fishing activity. Displacement of recreational fishing activity. 	<ul style="list-style-type: none"> Use controlled recovery techniques to limit seabed disturbance. Equipment to be marked on navigational charts until removal.
Discharges: Project Vessels	<ul style="list-style-type: none"> Sewage, greywater and putrescible waste will be discharged from project vessels. Bilge water, deck drainage and brine and cooling water may also be discharged. 	<ul style="list-style-type: none"> Short-term, localised impacts to water quality i.e. eutrophication from the addition of nutrients from these discharge fluids. 	<ul style="list-style-type: none"> All routine marine discharges will be managed according to legislative and regulatory requirements.
Discharges: Decommissioning Activities	<ul style="list-style-type: none"> During equipment removal, small volumes of treated seawater within the equipment will be released into the surrounding environment. Chemical use may be required to remove marine growth. During recovery of the blocked H4 flowline, it may be necessary to cut and recover rather than unblocking, resulting in a release of up to 14m³ crude oil and sand 	<ul style="list-style-type: none"> Localised short-term impacts to water quality from the release of seawater ballast and residual chemicals and hydrocarbons. 	<ul style="list-style-type: none"> Chemical reviews performed on all previously approved chemicals to confirm potential impacts are reduced to ALARP.

Potential Impact/ Risk	Description of Source of Potential Impact/ Risk	Description of Potential Impacts	Proposed Mitigation and/ or Management Measure
Light Emissions	<ul style="list-style-type: none"> Project vessels and MODU will use external lighting to navigate and conduct safe operations at night. Vessel lighting will also be used to communicate the vessel's presence to other marine users (i.e. navigation/ warning lights). Light emissions may be generated by flaring during well P&A if required. Flaring is only expected to occur for short durations (hours). 	<ul style="list-style-type: none"> Light emissions have the potential to affect fauna such as marine turtles and birds by influencing changes in behaviour or impacting their orientation. 	<ul style="list-style-type: none"> Implement relevant controls in the National Light Pollution Guidelines for Wildlife including Marine Turtles, Seabirds and Migratory Shorebirds (2020). Lighting will be limited to the minimum required for navigational and safety requirements except in emergency circumstances. Maintain a 12 km buffer from turtle nesting beaches during towing and lifting activities to avoid impacts to turtle hatchlings.
Noise Emissions	<ul style="list-style-type: none"> Project vessels will generate noise both in the air and underwater due to the operation or thruster engines, propellers, and the use of cutting tools subsea. 	<ul style="list-style-type: none"> Noise from project vessels and the MODU will contribute to ambient noise levels. Elevated underwater noise has the potential to affect marine fauna. 	<ul style="list-style-type: none"> Maintain a 12 km buffer from turtle nesting beaches during towing and lifting activities to avoid impacts to turtles. Compliance with legislative and regulatory requirements for interactions with marine fauna to prevent adverse interactions.
Atmospheric Emissions	<ul style="list-style-type: none"> Atmospheric emissions will be generated by the MODU and project vessels from internal combustion engines and incineration activities. Atmospheric emissions will be generated from venting of residual gas and contingent flaring from the MODU during P&A activities 	<ul style="list-style-type: none"> Emissions from project vessels could result in temporary, localised reductions in air quality in the immediate vicinity of the vessels. Venting or flaring of hydrocarbon gas may result in a short-lived localised gas plume and a minor contribution to greenhouse gas emissions 	<ul style="list-style-type: none"> Compliance with legislative and regulatory requirements for marine air pollution. Flaring and venting of hydrocarbons is restricted to a duration necessary to perform the P&A activity.
Unplanned			
Unplanned Hydrocarbon Release – vessel collision or Loss of Well Containment during P&A	<ul style="list-style-type: none"> Project vessels will use marine diesel fuel. In the unlikely event of a vessel collision involving a project vessel or third-party vessels during the activity, there is potential for a release of marine diesel fuel if the collision has enough force to penetrate the vessel hull in the exact location of the fuel tank. In the highly unlikely event of loss of well containment, there is the potential for a release of well fluids. 	<ul style="list-style-type: none"> In the highly unlikely event of a vessel collision causing a release of hydrocarbons, impacts to water quality and marine ecosystems could occur. 	<p>Preventing Vessel Collision:</p> <ul style="list-style-type: none"> 500 m exclusion zone established around the equipment and project vessels during removal activities. Compliance with legislative and regulatory requirements for the prevention of vessel collisions and safety and emergency arrangements. Consultation with relevant persons to ensure other marine users are informed and aware, reducing the likelihood of a collision. Develop a management plan for simultaneous operations where multiple campaigns occur concurrently in the same Operational Area. <p>Spill Response Arrangements:</p> <ul style="list-style-type: none"> Arrangements supporting the Oil Pollution Emergency Preparation document (OPEP) will be tested to ensure the OPEP can be implemented as planned. Emergency response activities would be implemented in line with the OPEP.

Potential Impact/ Risk	Description of Source of Potential Impact/ Risk	Description of Potential Impacts	Proposed Mitigation and/ or Management Measure
Deck Spills and Bunkering	<ul style="list-style-type: none"> Accidental deck spills from project vessels can include stored hydrocarbons, chemicals or equipment. 	<ul style="list-style-type: none"> Deck spills could result in short term, localised impacts to water quality or marine fauna in the immediate area surrounding the spill. 	<ul style="list-style-type: none"> Compliance with legislative and regulatory requirements for the prevention of marine pollution. Liquid chemical and fuel storage areas banded or secondarily contained when they are not being handled or temporarily moved. Maintain and locate spill kits in close proximity to hydrocarbon storage and deck areas for use to contain and recover deck spills Appropriate bunkering equipment kept and maintained, and contractors to follow procedures and requirements for bunkering and refuelling to reduce the likelihood of a spill.
Unplanned Discharge of Solid Hazardous/ Non-Hazardous Wastes	<ul style="list-style-type: none"> Accidental, unplanned loss of hazardous solid wastes such as oily rags or paint cans from the project vessels. 	<ul style="list-style-type: none"> Short term, localised impacts to water quality or marine fauna in the area surrounding the release. Incorrect classification of waste can also result in inappropriate disposal of hazardous decommissioning wastes. 	<ul style="list-style-type: none"> Compliance with legislative and regulatory requirements for the prevention of marine pollution and handling of hazardous wastes Project vessel waste arrangements to ensure waste is recorded and segregated and that all non-putrescible waste (excludes all food, greywater or sewage waste) to be disposed of onshore. Lost waste and dropped objects will be recovered, where safe and practicable. Waste contractors engaged to identify potential waste disposal pathways. Infrastructure and resource recovery strategy that ensures waste is handled and disposed of in accordance with applicable legislation, monitors and tracks waste and sets KPIs for recycling and reuse of decommissioned infrastructure.
Vessel Collision with Marine Fauna	<ul style="list-style-type: none"> Vessel movements have the potential to result in collisions between the vessel (hull and propellers) and marine fauna. 	<ul style="list-style-type: none"> Vessel disturbance presents a potential threat to marine mammals, marine reptiles and fish, sharks and rays. 	<ul style="list-style-type: none"> Compliance with legislative and regulatory requirements for interactions with marine fauna to reduce the likelihood of a collision occurring.
Disturbance to Seabed from Dropped Objects	<ul style="list-style-type: none"> Accidental, unplanned dropping of objects overboard from project vessels during recovery operations. 	<ul style="list-style-type: none"> Short term, localised impacts to sediment quality and benthic habitats. 	<ul style="list-style-type: none"> Project vessel inductions include control measures and training for crew in dropped object prevention. Lost waste/ dropped objects will be recovered where safe and practicable to do so. Procedures for lifts, bulk transfers and cargo loading if an unplanned object release does occur.
Accidental Introduction of Invasive Marine Species	<ul style="list-style-type: none"> Vessels transiting to the Operational Area may be subject to marine fouling whereby organisms attach to the vessel hull. Organisms can also be drawn into ballast tanks during onboarding of ballast water IMS could also be present as biofouling on subsea structures. 	<ul style="list-style-type: none"> 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. There is potential for the transfer of IMS between the project vessels and DTM while in its currently location within the Operational Area, or for IMS to be established in the shallower waters of the controlled sinking location or tow route and lift location. 	<ul style="list-style-type: none"> Ballast water will be managed according to legislative and regulatory requirements. Application of Woodside's IMS risk assessment and appropriate management measures to the RTM, project vessels and relevant immersible equipment such as Remotely Operated Vehicles (ROVs), unless exempt.

Potential Impact/ Risk	Description of Source of Potential Impact/ Risk	Description of Potential Impacts	Proposed Mitigation and/ or Management Measure
Indirect			
Waste generation	<ul style="list-style-type: none"> Removal of the subsea equipment will result in the generation of waste products 	<ul style="list-style-type: none"> Generation of waste products that require appropriate management. 	<ul style="list-style-type: none"> Recovered equipment will be transported onshore by a licensed waste contractor for disposal including recycling and reuse opportunities. Waste generated on the vessels will be managed in accordance with legislative requirements. Wastes will be managed and disposed of in a safe and environmentally responsible manner that prevents accidental loss to the environment.

Feedback

If you would like to comment on the proposed activities outlined in this information sheet, or would like additional information, please contact Woodside before 17 March 2023 via:

**E: Feedback@woodside.com.au
Toll free: 1800 442 977**

You can subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

Please note that stakeholder feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) as required under legislation. Woodside will communicate any material changes to the proposed activity to affected stakeholders as they arise.

Please note that your feedback and our response will be included in our EP for the proposed activity, which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth)*.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EP in order for this information to remain confidential to NOPSEMA.

2.2 Email sent to the following persons or organisations (16 February 2023)

- Australian Border Force (ABF)
- Department of Industry, Science and Resources (DISR)
- Department of Mines, Industry and Regulation (DMIRS)
- Australian Petroleum Production and Exploration Association (APPEA)
- Marine Tourism Western Australia
- Pearl Producers Association (PPA)
- Recfishwest
- WA Game Fishing Association

Dear Stakeholder

Woodside is providing this update on the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

We are providing this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

A summary of proposed activities is outlined below, and more detailed information is provided in the attached Consultation Information Sheets. The Information Sheets provide details on activities proposed to be managed under a number of Environment Plans for each Field, including a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

Please let us know if you would like to update previous feedback or have any additional views by **17 March 2023**.

Activity:

	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	<p>Removal Activities</p> <ul style="list-style-type: none"> • Removal of subsea equipment (wellheads, trees, distribution skids, risers, flexible flowlines, rigid flowlines, umbilicals, and the pipeline end module (PLEM)). • Removal of the Riser Turret Mooring (RTM) and its moorings. Depending on the vessel utilised, recovery of 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> • Pre-execution activities associated with the well P&A, such as barrier testing and removal of marine growth. • Well P&A of the 10 productions/injection wells by placing cement plugs in the wells to permanently prevent hydrocarbon release.

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	<p>the RTM may require sections of it to be towed to shallower water out of the title.</p> <ul style="list-style-type: none"> • Removal of an exploration wellhead (Ramillies-1 in neighbouring petroleum title WA-12-L). • Ongoing field management activities. • Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) within Commonwealth waters. <p>In Situ Activities</p> <ul style="list-style-type: none"> • Proposal to leave in situ 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the PLEM and 4 distribution skids. 	<ul style="list-style-type: none"> • Cutting and removal of the wellhead and subsea tree assembly. • Unblocking of the H4 flowline, if deemed feasible. <p>Removal Activities</p> <ul style="list-style-type: none"> • Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, and umbilicals). • Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment. • Ongoing field management activities (equipment monitoring and inspection). <p>In Situ Activities</p> <ul style="list-style-type: none"> • Proposed leave in situ of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be removed following its drilling and abandonment in 2003.
Location:	<ul style="list-style-type: none"> • 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> • 53 km northwest of Exmouth, Western Australia.
Approx. Water Depth (m):	<ul style="list-style-type: none"> • Approx. 120 m. 	<ul style="list-style-type: none"> • Approx. 810 – 850 m.
Schedule:	<p>Removal Activities</p> <ul style="list-style-type: none"> • Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. • Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> • Earliest P&A start is estimated to be Q4 2023, subject to approvals, MODU and vessel availability and weather constraints. • P&A activities must be completed no later than 30 September 2024, pursuant to General Direction 833. <p>Removal Activities</p> <ul style="list-style-type: none"> • Earliest facilities and DTM removal is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints.

		<ul style="list-style-type: none"> Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.
Duration:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> P&A activities are anticipated to take approximately 6 – 9 months. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 4-6 months to complete and DTM removal activities are anticipated to take approximately 1 month to complete.
Exclusionary/Cautious Zone:	<p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the equipment. A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow activities. 	<p>P&A Activities</p> <ul style="list-style-type: none"> The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centers within WA-32-L. A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities. <p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads. The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. A temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.
Vessels:	<p>Removal Activities</p> <ul style="list-style-type: none"> Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. 	<p>P&A activities</p> <ul style="list-style-type: none"> Semi-Submersible Mobile Offshore Drilling Unit (MODU)

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	<ul style="list-style-type: none"> An anchor handling tug (AHT) to support the towing of the RTM to sheltered water. 	<ul style="list-style-type: none"> The MODU will be supported by 2 to 3 offshore support vessels. <p>Removal Activities</p> <ul style="list-style-type: none"> CSV and HLV for recovery and activities. AHTs to support the towing of the DTM to the shallower water location (if required).
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Feedback:

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plan which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA.

Please provide your views by **17 March 2023**.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

2.3 Email sent to Exmouth Recreational Marine Users (16 February 2023)

Dear Charter / Tourism

Woodside is providing this update on the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

We are providing this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

A summary of proposed activities is outlined below, and more detailed information is provided in the attached Consultation Information Sheets. The Information Sheets provide details on activities proposed to be managed under a number of Environment Plans for each Field, including a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

Please let us know if you would like to update previous feedback or have any additional views by **17 March 2023**.

Activity:

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	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	<p>Removal Activities</p> <ul style="list-style-type: none"> • Removal of subsea equipment (wellheads, trees, distribution skids, risers, flexible flowlines, rigid flowlines, umbilicals, and the pipeline end module (PLEM)). • Removal of the Riser Turret Mooring (RTM) and its moorings. Depending on the vessel utilised, recovery of the RTM may require sections of it to be towed to shallower water out of the title. • Removal of an exploration wellhead (Ramillies-1 in neighbouring petroleum title WA-12-L). • Ongoing field management activities. • Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) within Commonwealth waters. <p>In Situ Activities</p> <ul style="list-style-type: none"> • Proposal to leave in situ 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the PLEM and 4 distribution skids. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> • Pre-execution activities associated with the well P&A, such as barrier testing and removal of marine growth. • Well P&A of the 10 productions/injection wells by placing cement plugs in the wells to permanently prevent hydrocarbon release. • Cutting and removal of the wellhead and subsea tree assembly. • Unblocking of the H4 flowline, if deemed feasible. <p>Removal Activities</p> <ul style="list-style-type: none"> • Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, and umbilicals). • Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment. • Ongoing field management activities (equipment monitoring and inspection).

		<p>In Situ Activities</p> <ul style="list-style-type: none"> Proposed leave in situ of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be removed following its drilling and abandonment in 2003.
Location:	<ul style="list-style-type: none"> 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> 53 km northwest of Exmouth, Western Australia.
Approx. Water Depth (m):	<ul style="list-style-type: none"> Approx. 120 m. 	<ul style="list-style-type: none"> Approx. 810 – 850 m.
Schedule:	<p>Removal Activities</p> <ul style="list-style-type: none"> Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Earliest P&A start is estimated to be Q4 2023, subject to approvals, MODU and vessel availability and weather constraints. P&A activities must be completed no later than 30 September 2024, pursuant to General Direction 833. <p>Removal Activities</p> <ul style="list-style-type: none"> Earliest facilities and DTM removal is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.
Duration:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> P&A activities are anticipated to take approximately 6 – 9 months. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take

		approximately 4-6 months to complete and DTM removal activities are anticipated to take approximately 1 month to complete.
Exclusionary/Cautious Zone:	<p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the equipment. A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow activities. 	<p>P&A Activities</p> <ul style="list-style-type: none"> The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centers within WA-32-L. A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities. <p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads. The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. A temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.
Vessels:	<p>Removal Activities</p> <ul style="list-style-type: none"> Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. An anchor handling tug (AHT) to support the towing 	<p>P&A activities</p> <ul style="list-style-type: none"> Semi-Submersible Mobile Offshore Drilling Unit (MODU) The MODU will be supported by 2 to 3 offshore support vessels.

	<p>of the RTM to sheltered water.</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • CSV and HLV for recovery and activities. • AHTs to support the towing of the DTM to the shallower water location (if required).
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Feedback:

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plan which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA.

Please provide your views by **17 March 2023**.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

Woodside Feedback

2.4 Email sent to the Conservation Council of WA (CCWA) (16 February 2023)

Dear Conservation Council of WA

Woodside is providing this update on the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

We are providing this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

A summary of proposed activities is outlined below, and more detailed information is provided in the attached Consultation Information Sheets. The Information Sheets provide details on activities proposed to be managed under a number of Environment Plans for each Field, including a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Stybarrow End State Decommissioning Environment Plan

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

Please let us know if you would like to update previous feedback or have any additional views by **17 March 2023**.

Activity:

	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	<p>Removal Activities</p> <ul style="list-style-type: none"> • Removal of subsea equipment (wellheads, trees, distribution skids, risers, flexible flowlines, rigid flowlines, umbilicals, and the pipeline end module (PLEM)). • Removal of the Riser Turret Mooring (RTM) and its moorings. Depending on the vessel utilised, recovery of the RTM may require sections of it to be towed to shallower water out of the title. • Removal of an exploration wellhead (Ramillies-1 in neighbouring petroleum title WA-12-L). • Ongoing field management activities. • Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) within Commonwealth waters. <p>In Situ Activities</p> <ul style="list-style-type: none"> • Proposal to leave in situ 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the PLEM and 4 distribution skids. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> • Pre-execution activities associated with the well P&A, such as barrier testing and removal of marine growth. • Well P&A of the 10 productions/injection wells by placing cement plugs in the wells to permanently prevent hydrocarbon release. • Cutting and removal of the wellhead and subsea tree assembly. • Unblocking of the H4 flowline, if deemed feasible. <p>Removal Activities</p> <ul style="list-style-type: none"> • Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, and umbilicals). • Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment. • Ongoing field management activities (equipment monitoring and inspection). <p>In Situ Activities</p> <ul style="list-style-type: none"> • Proposed leave in situ of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be removed

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		following its drilling and abandonment in 2003.
Location:	<ul style="list-style-type: none"> 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> 53 km northwest of Exmouth, Western Australia.
Approx. Water Depth (m):	<ul style="list-style-type: none"> Approx. 120 m. 	<ul style="list-style-type: none"> Approx. 810 – 850 m.
Schedule:	<p>Removal Activities</p> <ul style="list-style-type: none"> Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Earliest P&A start is estimated to be Q4 2023, subject to approvals, MODU and vessel availability and weather constraints. P&A activities must be completed no later than 30 September 2024, pursuant to General Direction 833. <p>Removal Activities</p> <ul style="list-style-type: none"> Earliest facilities and DTM removal is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.
Duration:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> P&A activities are anticipated to take approximately 6 – 9 months. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 4-6 months to complete and DTM removal activities are anticipated to take approximately 1 month to complete.
Exclusionary/Cautious Zone:	<p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the equipment. A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow activities. 	<p>P&A Activities</p> <ul style="list-style-type: none"> The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centres within WA-32-L. A temporary 500 m exclusion zone will apply around the MODU and the associated

		<p>project vessels during P&A activities.</p> <p>Removal Activities</p> <ul style="list-style-type: none"> • The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads. • The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. • A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. • A temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.
<p>Vessels:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. • An anchor handling tug (AHT) to support the towing of the RTM to sheltered water. 	<p>P&A activities</p> <ul style="list-style-type: none"> • Semi-Submersible Mobile Offshore Drilling Unit (MODU) • The MODU will be supported by 2 to 3 offshore support vessels. <p>Removal Activities</p> <ul style="list-style-type: none"> • CSV and HLV for recovery and activities. • AHTs to support the towing of the DTM to the shallower water location (if required).

Feedback:

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plan which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA.

Please provide your views by **17 March 2023**.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

2.5 Email sent to the Australian Conservation Foundation (ACF) (16 February 2023)

Dear Australian Conservation Foundation

Woodside is providing this update on the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

We are providing this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

A summary of proposed activities is outlined below, and more detailed information is provided in the attached Consultation Information Sheets. The Information Sheets provide details on activities proposed to be managed under a number of Environment Plans for each Field, including a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

Please let us know if you would like to update previous feedback or have any additional views by **17 March 2023**.

Activity:

	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, distribution skids, risers, flexible flowlines, rigid flowlines, umbilicals, and the pipeline end module (PLEM)). Removal of the Riser Turret Mooring (RTM) and its moorings. Depending on the vessel utilised, recovery of the RTM may require sections of it to be towed to shallower water out of the title. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Pre-execution activities associated with the well P&A, such as barrier testing and removal of marine growth. Well P&A of the 10 productions/injection wells by placing cement plugs in the wells to permanently prevent hydrocarbon release. Cutting and removal of the wellhead and subsea tree assembly. Unblocking of the H4 flowline, if deemed feasible.

	<ul style="list-style-type: none"> Removal of an exploration wellhead (Ramillies-1 in neighbouring petroleum title WA-12-L). Ongoing field management activities. Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) within Commonwealth waters. <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposal to leave in situ 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the PLEM and 4 distribution skids. 	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, and umbilicals). Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment. Ongoing field management activities (equipment monitoring and inspection). <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposed leave in situ of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be removed following its drilling and abandonment in 2003.
Location:	<ul style="list-style-type: none"> 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> 53 km northwest of Exmouth, Western Australia.
Approx. Water Depth (m):	<ul style="list-style-type: none"> Approx. 120 m. 	<ul style="list-style-type: none"> Approx. 810 – 850 m.
Schedule:	<p>Removal Activities</p> <ul style="list-style-type: none"> Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Earliest P&A start is estimated to be Q4 2023, subject to approvals, MODU and vessel availability and weather constraints. P&A activities must be completed no later than 30 September 2024, pursuant to General Direction 833. <p>Removal Activities</p> <ul style="list-style-type: none"> Earliest facilities and DTM removal is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.
Duration:	Removal Activities	Plugging and Abandonment (P&A) Activities

	<ul style="list-style-type: none"> Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete. 	<ul style="list-style-type: none"> P&A activities are anticipated to take approximately 6 – 9 months. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 4-6 months to complete and DTM removal activities are anticipated to take approximately 1 month to complete.
Exclusionary/Cautious Zone:	<p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the equipment. A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow activities. 	<p>P&A Activities</p> <ul style="list-style-type: none"> The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centres within WA-32-L. A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities. <p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads. The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. A temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.
Vessels:	<p>Removal Activities</p> <ul style="list-style-type: none"> Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. An anchor handling tug (AHT) to support the towing of the RTM to sheltered water. 	<p>P&A activities</p> <ul style="list-style-type: none"> Semi-Submersible Mobile Offshore Drilling Unit (MODU) The MODU will be supported by 2 to 3 offshore support vessels. <p>Removal Activities</p> <ul style="list-style-type: none"> CSV and HLV for recovery and activities.

		<ul style="list-style-type: none">AHTs to support the towing of the DTM to the shallower water location (if required).
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Feedback:

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plan which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA.

Please provide your views by **17 March 2023**.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

2.6 Email sent to the WAFIC (16 February 2023)

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Woodside is providing this update on the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

We are providing this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Operational Areas and Exclusion Zones will apply around a range of vessels that will support plugging and abandonment and infrastructure recovery and removal activities, which are outlined in the activity summaries below.

A summary of proposed activities is outlined below and more detailed information is provided in the attached Consultation Information Sheets, including a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Fisheries have been identified as being relevant based on fishing licence overlap with the activity area, assessment of government fishing effort data (including Fishcube and AFMA) from recent years, fishing methods and water depth.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). Please let us know if you would like to update previous feedback or have any additional views by 17 March 2023.

Activity:

	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, distribution skids, risers, flexible flowlines, rigid flowlines, umbilicals, and the pipeline end module (PLEM)). Removal of the Riser Turret Mooring (RTM) and its moorings. Depending on the vessel utilised, recovery of the RTM may require sections of it to be towed to shallower water out of the title. Removal of an exploration wellhead (Ramillies-1 in neighbouring petroleum title WA-12-L). Ongoing field management activities. Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) within Commonwealth waters. <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposal to leave in situ 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the PLEM and 4 distribution skids. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Pre-execution activities associated with the well P&A, such as barrier testing and removal of marine growth. Well P&A of the 10 productions/injection wells by placing cement plugs in the wells to permanently prevent hydrocarbon release. Cutting and removal of the wellhead and subsea tree assembly. Unblocking of the H4 flowline, if deemed feasible. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, and umbilicals). Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment. Ongoing field management activities (equipment monitoring and inspection). <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposed leave in situ of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be removed following its drilling and abandonment in 2003.
Location:	<ul style="list-style-type: none"> 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> 53 km northwest of Exmouth, Western Australia.
Approx. Water Depth (m):	<ul style="list-style-type: none"> Approx. 120 m. 	<ul style="list-style-type: none"> Approx. 810 – 850 m.

<p>Schedule:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. • Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> • Earliest P&A start is estimated to be Q4 2023, subject to approvals, MODU and vessel availability and weather constraints. • P&A activities must be completed no later than 30 September 2024, pursuant to General Direction 833. <p>Removal Activities</p> <ul style="list-style-type: none"> • Earliest facilities and DTM removal is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. • Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.
<p>Duration:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> • P&A activities are anticipated to take approximately 6 – 9 months. <p>Removal Activities</p> <ul style="list-style-type: none"> • Removal activities are anticipated to take approximately 4-6 months to complete and DTM removal activities are anticipated to take approximately 1 month to complete.
<p>Exclusionary/Cautious Zone:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the equipment. • A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow activities. 	<p>P&A Activities</p> <ul style="list-style-type: none"> • The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centres within WA-32-L. • A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities. <p>Removal Activities</p> <ul style="list-style-type: none"> • The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads.

		<ul style="list-style-type: none"> • The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. • A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. • A temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.
Vessels:	Removal Activities <ul style="list-style-type: none"> • Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. • An anchor handling tug (AHT) to support the towing of the RTM to sheltered water. 	P&A activities <ul style="list-style-type: none"> • Semi-Submersible Mobile Offshore Drilling Unit (MODU) • The MODU will be supported by 2 to 3 offshore support vessels. Removal Activities <ul style="list-style-type: none"> • CSV and HLV for recovery and activities. • AHTs to support the towing of the DTM to the shallower water location (if required).

**Commercial fishing implications:
Commonwealth-managed fisheries**

We note there are three active overlapping Commonwealth managed fisheries in the environment that may be affected (EMBA), listed below, of which the Western Deepwater Trawl Fishery may have been active in the Stybarrow Operational Area in recent years. We have consulted licence holders in this fishery.

- Western Tuna and Billfish
- North West Slope Trawl
- Western Deepwater Trawl

Woodside has also provided information to the representative organisations of other identified Commonwealth managed fisheries on AFMA advice that it expects all Commonwealth fishers who have entitlements to fish within the proposed area to be consulted, which can be through the relevant fishing industry associations.

State-managed fisheries

We note that there are 20 overlapping State managed fisheries in the EMBA listed below.

- Exmouth Gulf Beach Seine and Mesh Net Managed Fish
- Exmouth Gulf Prawn Managed Fishery
- Gascoyne Demersal Scalefish Managed Fishery
- Mackerel Managed Fishery (Area 2)
- Mackerel Managed Fishery (Area 3)
- Marine Aquarium Fish Managed Fishery
- Nickol Bay Prawn Managed Fishery
- Onslow Prawn Managed Fishery
- Open Access in the North Coast, Gascoyne Coast and
- Pilbara Crab Managed Fishery

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Stybarrow End State Decommissioning Environment Plan

- Pilbara Fish Trawl (Interim) Managed Fishery
- Pilbara Line Fishery (Condition)
- Pilbara Trap Managed Fishery
- Shark Bay Crab Managed Fishery
- Shark Bay Prawn Managed Fishery
- Shark Bay Scallop Managed Fishery
- West Australian Sea Cucumber Fishery
- West Coast Deep Sea Crustacean Managed Fishery
- West Coast Demersal Scalefish (Interim) Managed Fishery
- West Coast Rock Lobster Managed Fishery

Of these State-managed fisheries, the following may have been active in the Operational Area in recent years.

Griffin Field Decommissioning	Stybarrow Field Decommissioning
<ul style="list-style-type: none"> • Exmouth Gulf Prawn Managed Fishery • Mackerel Managed Fishery (Area 2) • Marine Aquarium Fish Managed Fishery • Onslow Prawn Managed Fishery • Pilbara Line Fishery (Condition) • Pilbara Trap Managed Fishery • Tour Operators • West Coast Deep Sea Crustacean Managed Fishery 	<ul style="list-style-type: none"> • Tour Operators • West Coast Deep Sea Crustacean Managed Fishery

Feedback:

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Your feedback and our response will be included in our Environment Plan which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA. Please provide your views by **17 March 2023**.

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2.7 Email sent to the AMSA and AHO (16 February 2023)

Dear AMSA and AHO

Woodside is providing this update on the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

We are providing this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

Stybarrow End State Decommissioning Environment Plan

The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

A summary of proposed activities is outlined below, and more detailed information is provided in the attached Consultation Information Sheets. The Information Sheets provide details on activities proposed to be managed under a number of Environment Plans for each Field, including a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

Please let us know if you would like to update previous feedback or have any additional views by **17 March 2023**.

Activity:

	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, distribution skids, risers, flexible flowlines, rigid flowlines, umbilicals, and the pipeline end module (PLEM)). Removal of the Riser Turret Mooring (RTM) and its moorings. Depending on the vessel utilised, recovery of the RTM may require sections of it to be towed to shallower water out of the title. Removal of an exploration wellhead (Ramillies-1 in neighbouring petroleum title WA-12-L). Ongoing field management activities. Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) within Commonwealth waters. <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposal to leave in situ 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the PLEM and 4 distribution skids. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Pre-execution activities associated with the well P&A, such as barrier testing and removal of marine growth. Well P&A of the 10 productions/injection wells by placing cement plugs in the wells to permanently prevent hydrocarbon release. Cutting and removal of the wellhead and subsea tree assembly. Unblocking of the H4 flowline, if deemed feasible. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, and umbilicals). Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment. Ongoing field management activities (equipment monitoring and inspection). <p>In Situ Activities</p>

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		<ul style="list-style-type: none"> Proposed leave in situ of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be removed following its drilling and abandonment in 2003.
Location:	<ul style="list-style-type: none"> 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> 53 km northwest of Exmouth, Western Australia.
Approx. Water Depth (m):	<ul style="list-style-type: none"> Approx. 120 m. 	<ul style="list-style-type: none"> Approx. 810 – 850 m.
Schedule:	<p>Removal Activities</p> <ul style="list-style-type: none"> Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Earliest P&A start is estimated to be Q4 2023, subject to approvals, MODU and vessel availability and weather constraints. P&A activities must be completed no later than 30 September 2024, pursuant to General Direction 833. <p>Removal Activities</p> <ul style="list-style-type: none"> Earliest facilities and DTM removal is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.
Duration:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> P&A activities are anticipated to take approximately 6 – 9 months. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 4-6 months to complete and DTM removal activities are anticipated to take approximately 1 month to complete.
Exclusionary/Cautious Zone:	<p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the equipment. 	<p>P&A Activities</p> <ul style="list-style-type: none"> The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centers within WA-32-L.

	<ul style="list-style-type: none"> • A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow activities. 	<ul style="list-style-type: none"> • A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities. <p>Removal Activities</p> <ul style="list-style-type: none"> • The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads. • The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. • A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. • A temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.
<p>Vessels:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. • An anchor handling tug (AHT) to support the towing of the RTM to sheltered water. 	<p>P&A activities</p> <ul style="list-style-type: none"> • Semi-Submersible Mobile Offshore Drilling Unit (MODU) • The MODU will be supported by 2 to 3 offshore support vessels. <p>Removal Activities</p> <ul style="list-style-type: none"> • CSV and HLV for recovery and activities. • AHTs to support the towing of the DTM to the shallower water location (if required).

Feedback:

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Please provide your views by **17 March 2023**.

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2.8 Email sent to the Department of Defence (DoD) (16 February 2023)

Dear Department of Defence

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We are providing this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

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Activity:

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	<ul style="list-style-type: none"> Removal of an exploration wellhead (Ramillies-1 in neighbouring petroleum title WA-12-L). Ongoing field management activities. Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) within Commonwealth waters. <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposal to leave in situ 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the PLEM and 4 distribution skids. 	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, and umbilicals). Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment. Ongoing field management activities (equipment monitoring and inspection). <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposed leave in situ of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be removed following its drilling and abandonment in 2003.
Location:	<ul style="list-style-type: none"> 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> 53 km northwest of Exmouth, Western Australia.
Approx. Water Depth (m):	<ul style="list-style-type: none"> Approx. 120 m. 	<ul style="list-style-type: none"> Approx. 810 – 850 m.
Schedule:	<p>Removal Activities</p> <ul style="list-style-type: none"> Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Earliest P&A start is estimated to be Q4 2023, subject to approvals, MODU and vessel availability and weather constraints. P&A activities must be completed no later than 30 September 2024, pursuant to General Direction 833. <p>Removal Activities</p> <ul style="list-style-type: none"> Earliest facilities and DTM removal is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.
Duration:	Removal Activities	Plugging and Abandonment (P&A) Activities

	<ul style="list-style-type: none"> Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete. 	<ul style="list-style-type: none"> P&A activities are anticipated to take approximately 6 – 9 months. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 4-6 months to complete and DTM removal activities are anticipated to take approximately 1 month to complete.
Exclusionary/Cautious Zone:	<p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the equipment. A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow activities. 	<p>P&A Activities</p> <ul style="list-style-type: none"> The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centers within WA-32-L. A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities. <p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads. The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. A temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.
Vessels:	<p>Removal Activities</p> <ul style="list-style-type: none"> Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. An anchor handling tug (AHT) to support the towing of the RTM to sheltered water. 	<p>P&A activities</p> <ul style="list-style-type: none"> Semi-Submersible Mobile Offshore Drilling Unit (MODU) The MODU will be supported by 2 to 3 offshore support vessels. <p>Removal Activities</p> <ul style="list-style-type: none"> CSV and HLV for recovery and activities.

		<ul style="list-style-type: none">AHTs to support the towing of the DTM to the shallower water location (if required).
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Feedback:

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plan which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA.

Please provide your views by **17 March 2023**.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

2.9 Email sent to the CFA (16 February 2023)

Dear [REDACTED]

Woodside is providing this update on the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

We are providing this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Operational Areas and Exclusion Zones will apply around a range of vessels that will support plugging and abandonment and infrastructure recovery and removal activities, which are outlined in the activity summaries below.

A summary of proposed activities is outlined below and more detailed information is provided in the attached Consultation Information Sheets, including a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Fisheries have been identified as being relevant based on fishing licence overlap with the activity area, assessment of government fishing effort data (including Fishcube and AFMA) from recent years, fishing methods and water depth.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). Please let us know if you would like to update previous feedback or have any additional views by 17 March 2023.

Activity:

	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	<p>Removal Activities</p> <ul style="list-style-type: none"> • Removal of subsea equipment (wellheads, trees, distribution skids, risers, flexible flowlines, rigid flowlines, umbilicals, and the pipeline end module (PLEM)). • Removal of the Riser Turret Mooring (RTM) and its moorings. Depending on the vessel utilised, recovery of the RTM may require sections of it to be towed to shallower water out of the title. • Removal of an exploration wellhead (Ramillies-1 in neighbouring petroleum title WA-12-L). • Ongoing field management activities. • Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) within Commonwealth waters. <p>In Situ Activities</p> <ul style="list-style-type: none"> • Proposal to leave in situ 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the PLEM and 4 distribution skids. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> • Pre-execution activities associated with the well P&A, such as barrier testing and removal of marine growth. • Well P&A of the 10 productions/injection wells by placing cement plugs in the wells to permanently prevent hydrocarbon release. • Cutting and removal of the wellhead and subsea tree assembly. • Unblocking of the H4 flowline, if deemed feasible. <p>Removal Activities</p> <ul style="list-style-type: none"> • Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, and umbilicals). • Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment. • Ongoing field management activities (equipment monitoring and inspection). <p>In Situ Activities</p> <ul style="list-style-type: none"> • Proposed leave in situ of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be removed following its drilling and abandonment in 2003.
Location:	<ul style="list-style-type: none"> • 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> • 53 km northwest of Exmouth, Western Australia.
Approx. Water Depth (m):	<ul style="list-style-type: none"> • Approx. 120 m. 	<ul style="list-style-type: none"> • Approx. 810 – 850 m.

<p>Schedule:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. • Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> • Earliest P&A start is estimated to be Q4 2023, subject to approvals, MODU and vessel availability and weather constraints. • P&A activities must be completed no later than 30 September 2024, pursuant to General Direction 833. <p>Removal Activities</p> <ul style="list-style-type: none"> • Earliest facilities and DTM removal is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. • Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.
<p>Duration:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> • P&A activities are anticipated to take approximately 6 – 9 months. <p>Removal Activities</p> <ul style="list-style-type: none"> • Removal activities are anticipated to take approximately 4-6 months to complete and DTM removal activities are anticipated to take approximately 1 month to complete.
<p>Exclusionary/Cautious Zone:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the equipment. • A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow activities. 	<p>P&A Activities</p> <ul style="list-style-type: none"> • The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centers within WA-32-L. • A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities. <p>Removal Activities</p> <ul style="list-style-type: none"> • The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads.

		<ul style="list-style-type: none"> The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. A temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.
Vessels:	Removal Activities <ul style="list-style-type: none"> Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. An anchor handling tug (AHT) to support the towing of the RTM to sheltered water. 	P&A activities <ul style="list-style-type: none"> Semi-Submersible Mobile Offshore Drilling Unit (MODU) The MODU will be supported by 2 to 3 offshore support vessels. Removal Activities <ul style="list-style-type: none"> CSV and HLV for recovery and activities. AHTs to support the towing of the DTM to the shallower water location (if required).

Commonwealth-managed fishery implications:

We note there are three overlapping Commonwealth managed fisheries (listed below) in the Environments that May Be Affected (EMBA)s for the Griffin and Stybarrow decommissioning projects, of which the Western Deepwater Trawl Fishery may have been active in the Stybarrow Operational Area (see attached Information Sheets for more details).

- Western Tuna and Billfish
- North West Slope Trawl
- Western Deepwater Trawl

Woodside is consulting licence holders in these fisheries, as well as providing information to representative organisations on AFMA advice that it expects all Commonwealth fishers who have entitlements to fish within the proposed area to be consulted, which can be through the relevant fishing industry associations.

Feedback:

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plan which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA. Please provide your views by **17 March 2023**.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

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2.10 Email sent to Tuna Australia (16 February 2023)

Dear [REDACTED]

Woodside is providing this update on the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

We are providing this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

The Stybarrow Field is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Operational Areas and Exclusion Zones will apply around a range of vessels that will support plugging and abandonment and infrastructure recovery and removal activities, which are outlined in the activity summaries below.

A summary of proposed activities is outlined below and more detailed information is provided in the attached Consultation Information Sheets, including a summary of potential key risks and associated management measures. The Information Sheets are also available on our website.

Fisheries have been identified as being relevant based on fishing licence overlap with the activity area, assessment of government fishing effort data (including Fishcube and AFMA) from recent years, fishing methods and water depth.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). Please let us know if you would like to update previous feedback or have any additional views by 17 March 2023.

Activity:

	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, distribution skids, risers, flexible flowlines, rigid flowlines, umbilicals, and the pipeline end module (PLEM)). Removal of the Riser Turret Mooring (RTM) and its moorings. Depending on the vessel utilised, recovery of the RTM may require sections of it to be towed to shallower water out of the title. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Pre-execution activities associated with the well P&A, such as barrier testing and removal of marine growth. Well P&A of the 10 productions/injection wells by placing cement plugs in the wells to permanently prevent hydrocarbon release. Cutting and removal of the wellhead and subsea tree assembly. Unblocking of the H4 flowline, if deemed feasible.

	<ul style="list-style-type: none"> Removal of an exploration wellhead (Ramillies-1 in neighbouring petroleum title WA-12-L). Ongoing field management activities. Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) within Commonwealth waters. <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposal to leave in situ 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the PLEM and 4 distribution skids. 	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, and umbilicals). Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment. Ongoing field management activities (equipment monitoring and inspection). <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposed leave in situ of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be removed following its drilling and abandonment in 2003.
Location:	<ul style="list-style-type: none"> 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> 53 km northwest of Exmouth, Western Australia.
Approx. Water Depth (m):	<ul style="list-style-type: none"> Approx. 120 m. 	<ul style="list-style-type: none"> Approx. 810 – 850 m.
Schedule:	<p>Removal Activities</p> <ul style="list-style-type: none"> Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Earliest P&A start is estimated to be Q4 2023, subject to approvals, MODU and vessel availability and weather constraints. P&A activities must be completed no later than 30 September 2024, pursuant to General Direction 833. <p>Removal Activities</p> <ul style="list-style-type: none"> Earliest facilities and DTM removal is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.

<p>Duration:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> P&A activities are anticipated to take approximately 6 – 9 months. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 4-6 months to complete and DTM removal activities are anticipated to take approximately 1 month to complete.
<p>Exclusionary/Cautious Zone:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the equipment. A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow activities. 	<p>P&A Activities</p> <ul style="list-style-type: none"> The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centres within WA-32-L. A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities. <p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads. The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. A temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.
<p>Vessels:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. An anchor handling tug (AHT) to support the towing of the RTM to sheltered water. 	<p>P&A activities</p> <ul style="list-style-type: none"> Semi-Submersible Mobile Offshore Drilling Unit (MODU) The MODU will be supported by 2 to 3 offshore support vessels. <p>Removal Activities</p>

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		<ul style="list-style-type: none">• CSV and HLV for recovery and activities.• AHTs to support the towing of the DTM to the shallower water location (if required).
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Commonwealth-managed fishery implications:

We note there are three overlapping Commonwealth managed fisheries (listed below) in the Environments that May Be Affected (EMBA) for the Griffin and Stybarrow decommissioning projects, of which the Western Deepwater Trawl Fishery may have been active in the Stybarrow Operational Area (see attached Information Sheets for more details).

- Western Tuna and Billfish
- North West Slope Trawl
- Western Deepwater Trawl

Woodside is consulting licence holders in these fisheries, as well as providing information to representative organisations on AFMA advice that it expects all Commonwealth fishers who have entitlements to fish within the proposed area to be consulted, which can be through the relevant fishing industry associations.

Feedback:

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plan which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA. Please provide your views by **17 March 2023**.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

2.11 Email sent to the Australian Fisheries Management Authority (AFMA) (16 February 2023)

Dear AFMA

Woodside is providing this update on the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

We are providing this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Operational Areas and Exclusion Zones will apply around a range of vessels that will support plugging and abandonment and infrastructure recovery and removal activities, which are outlined in the activity summaries below.

A summary of proposed activities is outlined below and more detailed information is provided in the attached Consultation Information Sheets, including a summary of potential key risks and associated management measures. The Information Sheets are also available on our website.

Fisheries have been identified as being relevant based on fishing licence overlap with the activity area, assessment of government fishing effort data (including Fishcube and AFMA) from recent years, fishing methods and water depth.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). Please let us know if you would like to update previous feedback or have any additional views by 17 March 2023.

Activity:

	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, distribution skids, risers, flexible flowlines, rigid flowlines, umbilicals, and the pipeline end module (PLEM)). Removal of the Riser Turret Mooring (RTM) and its moorings. Depending on the vessel utilised, recovery of the RTM may require sections of it to be towed to shallower water out of the title. Removal of an exploration wellhead (Ramillies-1 in neighbouring petroleum title WA-12-L). Ongoing field management activities. Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) within Commonwealth waters. <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposal to leave in situ 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Pre-execution activities associated with the well P&A, such as barrier testing and removal of marine growth. Well P&A of the 10 productions/injection wells by placing cement plugs in the wells to permanently prevent hydrocarbon release. Cutting and removal of the wellhead and subsea tree assembly. Unblocking of the H4 flowline, if deemed feasible. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, and umbilicals). Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment. Ongoing field management activities (equipment monitoring and inspection).

	<p>PLEM and 4 distribution skids.</p>	<p>In Situ Activities</p> <ul style="list-style-type: none"> Proposed leave in situ of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be removed following its drilling and abandonment in 2003.
Location:	<ul style="list-style-type: none"> 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> 53 km northwest of Exmouth, Western Australia.
Approx. Water Depth (m):	<ul style="list-style-type: none"> Approx. 120 m. 	<ul style="list-style-type: none"> Approx. 810 – 850 m.
Schedule:	<p>Removal Activities</p> <ul style="list-style-type: none"> Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Earliest P&A start is estimated to be Q4 2023, subject to approvals, MODU and vessel availability and weather constraints. P&A activities must be completed no later than 30 September 2024, pursuant to General Direction 833. <p>Removal Activities</p> <ul style="list-style-type: none"> Earliest facilities and DTM removal is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.
Duration:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> P&A activities are anticipated to take approximately 6 – 9 months. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 4-6 months to complete and DTM removal activities are anticipated to take approximately 1 month to complete.
Exclusionary/Cautious Zone:	<p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an 	<p>P&A Activities</p> <ul style="list-style-type: none"> The Operational Area includes the area encompassing an approximate 3,000 m radius

	<p>approximate 1,500 m radius around the equipment.</p> <ul style="list-style-type: none"> • A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow activities. 	<p>around each of the four drill centers within WA-32-L.</p> <ul style="list-style-type: none"> • A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities. <p>Removal Activities</p> <ul style="list-style-type: none"> • The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads. • The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. • A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. • A temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.
<p>Vessels:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. • An anchor handling tug (AHT) to support the towing of the RTM to sheltered water. 	<p>P&A activities</p> <ul style="list-style-type: none"> • Semi-Submersible Mobile Offshore Drilling Unit (MODU) • The MODU will be supported by 2 to 3 offshore support vessels. <p>Removal Activities</p> <ul style="list-style-type: none"> • CSV and HLV for recovery and activities. • AHTs to support the towing of the DTM to the shallower water location (if required).

Commonwealth-managed fishery implications:

We note there are three overlapping Commonwealth managed fisheries (listed below) in the Environments that May Be Affected (EMBAs) for the Griffin and Stybarrow decommissioning projects, of which the Western Deepwater Trawl Fishery may have been active in the Stybarrow Operational Area (see attached Information Sheets for more details).

- Western Tuna and Billfish
- North West Slope Trawl
- Western Deepwater Trawl

Woodside is consulting licence holders in these fisheries, as well as providing information to representative organisations on AFMA advice that it expects all Commonwealth fishers who have

Stybarrow End State Decommissioning Environment Plan

entitlements to fish within the proposed area to be consulted, which can be through the relevant fishing industry associations.

Feedback:

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plan which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA. Please provide your views by **17 March 2023**.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

2.12 Email sent to the Department of Primary Industries and Regional Development (DPIRD) (16 February 2023)

Dear DPIRD

Woodside is providing this update on the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

We are providing this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Operational Areas and Exclusion Zones will apply around a range of vessels that will support plugging and abandonment and infrastructure recovery and removal activities, which are outlined in the activity summaries below.

A summary of proposed activities is outlined below and more detailed information is provided in the attached Consultation Information Sheets, including a summary of potential key risks and associated management measures. The Information Sheets are also available and be accessed via the QR Code in this letter.

Fisheries have been identified as being relevant based on fishing licence overlap with the activity area, assessment of government fishing effort data (including Fishcube and AFMA) from recent years, fishing methods and water depth.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management

Stybarrow End State Decommissioning Environment Plan

Authority (NOPSEMA). Please let us know if you would like to update previous feedback or have any additional views by 17 March 2023.

Activity:

	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, distribution skids, risers, flexible flowlines, rigid flowlines, umbilicals, and the pipeline end module (PLEM)). Removal of the Riser Turret Mooring (RTM) and its moorings. Depending on the vessel utilised, recovery of the RTM may require sections of it to be towed to shallower water out of the title. Removal of an exploration wellhead (Ramillies-1 in neighbouring petroleum title WA-12-L). Ongoing field management activities. Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) within Commonwealth waters. <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposal to leave <i>in situ</i> 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the PLEM and 4 distribution skids. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Pre-execution activities associated with the well P&A, such as barrier testing and removal of marine growth. Well P&A of the 10 productions/injection wells by placing cement plugs in the wells to permanently prevent hydrocarbon release. Cutting and removal of the wellhead and subsea tree assembly. Unblocking of the H4 flowline, if deemed feasible. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, and umbilicals). Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment. Ongoing field management activities (equipment monitoring and inspection). <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposed leave <i>in situ</i> of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be removed following its drilling and abandonment in 2003.
Location:	<ul style="list-style-type: none"> 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> 53 km northwest of Exmouth, Western Australia.

<p>Approx. Water Depth (m):</p>	<ul style="list-style-type: none"> • Approx. 120 m. 	<ul style="list-style-type: none"> • Approx. 810 – 850 m.
<p>Schedule:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. • Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> • Earliest P&A start is estimated to be Q4 2023, subject to approvals, MODU and vessel availability and weather constraints. • P&A activities must be completed no later than 30 September 2024, pursuant to General Direction 833. <p>Removal Activities</p> <ul style="list-style-type: none"> • Earliest facilities and DTM removal is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. • Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.
<p>Duration:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> • P&A activities are anticipated to take approximately 6 – 9 months. <p>Removal Activities</p> <ul style="list-style-type: none"> • Removal activities are anticipated to take approximately 4-6 months to complete and DTM removal activities are anticipated to take approximately 1 month to complete.
<p>Exclusionary/Cautious Zone:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the equipment. • A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow activities. 	<p>P&A Activities</p> <ul style="list-style-type: none"> • The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centers within WA-32-L. • A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities. <p>Removal Activities</p> <ul style="list-style-type: none"> • The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the

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		<p>subsea infrastructure and wellheads.</p> <ul style="list-style-type: none"> • The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. • A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. • A temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.
Vessels:	<p>Removal Activities</p> <ul style="list-style-type: none"> • Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. • An anchor handling tug (AHT) to support the towing of the RTM to sheltered water. 	<p>P&A activities</p> <ul style="list-style-type: none"> • Semi-Submersible Mobile Offshore Drilling Unit (MODU) • The MODU will be supported by 2 to 3 offshore support vessels. <p>Removal Activities</p> <ul style="list-style-type: none"> • CSV and HLV for recovery and activities. • AHTs to support the towing of the DTM to the shallower water location (if required).

State-managed fisheries implications:

We note there are 20 overlapping State managed fisheries (listed below) in the Environments that May Be Affected (EMBA) for the Griffin and Stybarrow decommissioning projects (see attached Information Sheets for more details).

- Exmouth Gulf Beach Seine and Mesh Net Managed Fish
- Exmouth Gulf Prawn Managed Fishery
- Gascoyne Demersal Scalefish Managed Fishery
- Mackerel Managed Fishery (Area 2)
- Mackerel Managed Fishery (Area 3)
- Marine Aquarium Fish Managed Fishery
- Nickol Bay Prawn Managed Fishery
- Onslow Prawn Managed Fishery
- Pilbara Crab Managed Fishery
- Pilbara Fish Trawl (Interim) Managed Fishery
- Pilbara Line Fishery (Condition)
- Pilbara Trap Managed Fishery
- Shark Bay Crab Managed Fishery
- Shark Bay Prawn Managed Fishery
- Shark Bay Scallop Managed Fishery
- West Australian Sea Cucumber Fishery
- West Coast Deep Sea Crustacean Managed Fishery
- West Coast Demersal Scalefish (Interim) Managed Fishery
- West Coast Rock Lobster Managed Fishery

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Of these State-managed fisheries, the following may have been active in the Operational Area in recent years.

Griffin Field Decommissioning	Stybarrow Field Decommissioning
<ul style="list-style-type: none">• Exmouth Gulf Prawn Managed Fishery• Mackerel Managed Fishery (Area 2)• Marine Aquarium Fish Managed Fishery• Onslow Prawn Managed Fishery• Pilbara Line Fishery (Condition)• Pilbara Trap Managed Fishery• Tour Operators• West Coast Deep Sea Crustacean Managed Fishery	<ul style="list-style-type: none">• Tour Operators• West Coast Deep Sea Crustacean Managed Fishery

Woodside is consulting licence holders in all identified fisheries, as well as providing information to representative organisations.

Feedback:

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plan which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA.

Please provide your views by **17 March 2023**.

2.13 Email sent to the DCCEEW and DAFF (16 February 2023)

Dear DCCEEW and DAFF

Woodside is providing this update on the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

We are providing this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

A summary of proposed activities is outlined below, and more detailed information is provided in the attached Consultation Information Sheets. The Information Sheets provide details on activities proposed to be managed under a number of Environment Plans for each Field, including a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Stybarrow End State Decommissioning Environment Plan

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). Please let us know if you would like to update previous feedback or have any additional views by 17 March 2023.

Activity:

	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, distribution skids, risers, flexible flowlines, rigid flowlines, umbilicals, and the pipeline end module (PLEM)). Removal of the Riser Turret Mooring (RTM) and its moorings. Depending on the vessel utilised, recovery of the RTM may require sections of it to be towed to shallower water out of the title. Removal of an exploration wellhead (Ramillies-1 in neighbouring petroleum title WA-12-L). Ongoing field management activities. Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) within Commonwealth waters. <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposal to leave in situ 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the PLEM and 4 distribution skids. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Pre-execution activities associated with the well P&A, such as barrier testing and removal of marine growth. Well P&A of the 10 productions/injection wells by placing cement plugs in the wells to permanently prevent hydrocarbon release. Cutting and removal of the wellhead and subsea tree assembly. Unblocking of the H4 flowline, if deemed feasible. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, and umbilicals). Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment. Ongoing field management activities (equipment monitoring and inspection). <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposed leave in situ of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be removed following its drilling and abandonment in 2003.
Location:	<ul style="list-style-type: none"> 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> 53 km northwest of Exmouth, Western Australia.

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<p>Approx. Water Depth (m):</p>	<ul style="list-style-type: none"> • Approx. 120 m. 	<ul style="list-style-type: none"> • Approx. 810 – 850 m.
<p>Schedule:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. • Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> • Earliest P&A start is estimated to be Q4 2023, subject to approvals, MODU and vessel availability and weather constraints. • P&A activities must be completed no later than 30 September 2024, pursuant to General Direction 833. <p>Removal Activities</p> <ul style="list-style-type: none"> • Earliest facilities and DTM removal is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. • Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.
<p>Duration:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> • P&A activities are anticipated to take approximately 6 – 9 months. <p>Removal Activities</p> <ul style="list-style-type: none"> • Removal activities are anticipated to take approximately 4-6 months to complete and DTM removal activities are anticipated to take approximately 1 month to complete.
<p>Exclusionary/Cautious Zone:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the equipment. • A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow activities. 	<p>P&A Activities</p> <ul style="list-style-type: none"> • The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centers within WA-32-L. • A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities. <p>Removal Activities</p> <ul style="list-style-type: none"> • The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the

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		<ul style="list-style-type: none"> subsea infrastructure and wellheads. The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. A temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.
Vessels:	<p>Removal Activities</p> <ul style="list-style-type: none"> Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. An anchor handling tug (AHT) to support the towing of the RTM to sheltered water. 	<p>P&A activities</p> <ul style="list-style-type: none"> Semi-Submersible Mobile Offshore Drilling Unit (MODU) The MODU will be supported by 2 to 3 offshore support vessels. <p>Removal Activities</p> <ul style="list-style-type: none"> CSV and HLV for recovery and activities. AHTs to support the towing of the DTM to the shallower water location (if required).

Biosecurity implications:

With respect to the biosecurity matters, please note the following information below:

Environment description Griffin Field:

The **Operational Area** falls within the continental slope and shelf. The continental slope and shelf are, for the most part, ecosystems built on a soft sediment habitat with gradational variation in species composition due to depth, water temperature, light penetration and sediment composition/structure. It consists of generally sparse populations of sessile sponges, soft corals and algae (at shallower depths), with a mobile population of burrowing crustaceans, echinoderms and molluscs.

The **Environment that May Be Affected (EMBA)** falls within continental shelf, continental slope, continental rise and abyssal plain. The Griffin field subsea infrastructure has created a large artificial reef system in an otherwise fine sand and mud habitat with sparse benthic populations typical of the continental slope and shelf.

Environment description Stybarrow Field:

The **Operational Area** and the **EMBA** both fall within the outer shelf, continental slope, and deep ocean. The continental slope and shelf are, for the most part, ecosystems built on a soft sediment habitat with gradational variation in species composition due to depth, water temperature, light penetration, and sediment composition/structure. It consists of generally sparse populations of sessile filter feeders (e.g., sponges, soft corals etc.), infauna, and a mobile epibiota (e.g., crustaceans, echinoderms, and molluscs).

Potential IMS risk IMS mitigation management

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Accidental introduction and establishment of invasive marine species Ballast water will be managed according to legislative and regulatory requirements.
Application of Woodside's IMS risk assessment and appropriate management measures to the RTM (Griffin), DTM (Stybarrow), project vessels and relevant immersible equipment such as Remotely Operated Vehicles (ROVs), unless exempt.

Commercial fishing implications:

Woodside has assessed potential impacts for commercial fisheries based on ABARES/AFMA data, fishing methods and water depth.

We note there are three overlapping Commonwealth managed fisheries (listed below) in the Environments that May Be Affected (EMBAs) for the Griffin and Stybarrow decommissioning projects, of which the Western Deepwater Trawl Fishery may have been active in the Stybarrow Operational Area (see attached Information Sheets for more details).

- Western Tuna and Billfish
- North West Slope Trawl
- Western Deepwater Trawl

Woodside is consulting licence holders in these fisheries, as well as providing information to representative organisations on AFMA advice that it expects all Commonwealth fishers who have entitlements to fish within the proposed area to be consulted, which can be through the relevant fishing industry associations.

Feedback:

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plan which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA. Please provide your views by **17 March 2023**.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

2.14 Email sent to Director of National Parks (DNP) (16 February 2023)

Dear DNP

Woodside is planning to undertake subsea decommissioning activities for the Griffin and Stybarrow fields (previously operated by BHP Petroleum Pty Ltd (BHP)).

The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

A summary of proposed activities is outlined below, and more detailed information is provided in the attached Consultation Information Sheets. The Information Sheets provide details on activities proposed to be managed under a number of Environment Plans for each Field, including a summary

Stybarrow End State Decommissioning Environment Plan

of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

Please let us know if you would like to update previous feedback or have any additional views by **17 March 2023**.

Activity:

	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, distribution skids, risers, flexible flowlines, rigid flowlines, umbilicals, and the pipeline end module (PLEM)). Removal of the Riser Turret Mooring (RTM) and its moorings. Depending on the vessel utilised, recovery of the RTM may require sections of it to be towed to shallower water out of the title. Removal of an exploration wellhead (Ramillies-1 in neighbouring petroleum title WA-12-L). Ongoing field management activities. Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) within Commonwealth waters. <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposal to leave in situ 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the PLEM and 4 distribution skids. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Pre-execution activities associated with the well P&A, such as barrier testing and removal of marine growth. Well P&A of the 10 productions/injection wells by placing cement plugs in the wells to permanently prevent hydrocarbon release. Cutting and removal of the wellhead and subsea tree assembly. Unblocking of the H4 flowline, if deemed feasible. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, and umbilicals). Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment. Ongoing field management activities (equipment monitoring and inspection). <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposed leave in situ of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be

		removed following its drilling and abandonment in 2003.
Location:	<ul style="list-style-type: none"> 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> 53 km northwest of Exmouth, Western Australia.
Approx. Water Depth (m):	<ul style="list-style-type: none"> Approx. 120 m. 	<ul style="list-style-type: none"> Approx. 810 – 850 m.
Schedule:	<p>Removal Activities</p> <ul style="list-style-type: none"> Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Earliest P&A start is estimated to be Q4 2023, subject to approvals, MODU and vessel availability and weather constraints. P&A activities must be completed no later than 30 September 2024, pursuant to General Direction 833. <p>Removal Activities</p> <ul style="list-style-type: none"> Earliest facilities and DTM removal is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.
Duration:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> P&A activities are anticipated to take approximately 6 – 9 months. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 4-6 months to complete and DTM removal activities are anticipated to take approximately 1 month to complete.
Exclusionary/Cautionary Zone:	<p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the equipment. A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow activities. 	<p>P&A Activities</p> <ul style="list-style-type: none"> The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centers within WA-32-L. A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.

		<p>Removal Activities</p> <ul style="list-style-type: none"> • The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads. • The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. • A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. • A temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.
Vessels:	<p>Removal Activities</p> <ul style="list-style-type: none"> • Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. • An anchor handling tug (AHT) to support the towing of the RTM to sheltered water. 	<p>P&A activities</p> <ul style="list-style-type: none"> • Semi-Submersible Mobile Offshore Drilling Unit (MODU) • The MODU will be supported by 2 to 3 offshore support vessels. <p>Removal Activities</p> <ul style="list-style-type: none"> • CSV and HLV for recovery and activities. • AHTs to support the towing of the DTM to the shallower water location (if required).

Protected Area implications:

We note Australian Government Guidance on consultation activities and confirm that:

Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
<ul style="list-style-type: none"> • Proposed activities are outside the boundaries of a proclaimed Australian Marine Park. • Nearest protected areas are: <ul style="list-style-type: none"> ○ ~76 km to Gascoyne Commonwealth Marine Park ○ ~59 km to Ningaloo Marine Park (Commonwealth) ○ ~41 km to Ningaloo Marine Park (State) ○ ~42km to Murion Islands Marine Management Area 	<ul style="list-style-type: none"> • Proposed activities are outside the boundaries of a proclaimed Australian Marine Park. • Nearest protected areas are: <ul style="list-style-type: none"> ○ ~5 km to Gascoyne Commonwealth Marine Park ○ ~24 km to Ningaloo Marine Park (Commonwealth) ○ ~36 km to Ningaloo Marine Park (State) ○ ~45 km to Murion Islands Marine Management Area

Stybarrow End State Decommissioning Environment Plan

We have assessed potential risks to Protected Areas in the development of the proposed Environment Plan and believe that there are no credible risks as part of planned activities that have potential to impact the values of Australian Marine Parks.

The worst-case credible spill scenarios have been assessed for activities to be managed under the Environment Plans:

<p>Stybarrow Field Management and Decommissioning EP</p>	<p>The worst-case credible spill scenario assessed in this EP is the remote likelihood event of a vessel collision resulting a spill of marine diesel to the marine environment. Through review of hydrocarbon spill modelling, and with consideration of a 10 ppb dissolved and entrained hydrocarbon threshold, the following AMPs may be contacted in the event of a spill:</p> <ul style="list-style-type: none"> • Abrolhos • Argo-Rowley Terrace • Carnarvon Canyon • Dampier • Gascoyne • Montebello • Shark Bay
<p>Stybarrow Plugging abandonment EP</p>	<p>The worst-case credible spill scenario assessed in this EP is the remote likelihood event of a loss of well containment resulting in a spill of Stybarrow Crude to the marine environment. Through review of hydrocarbon spill modelling, and with consideration of a 10 ppb dissolved and entrained hydrocarbon threshold, the following AMPs may be contacted in the event of a spill:</p> <ul style="list-style-type: none"> • Carnarvon Canyon • Gascoyne • Ningaloo
<p>Griffin Decommissioning and Field Management EP</p>	<p>The worst-case credible spill scenario assessed in this EP is the remote likelihood event of a loss of well containment resulting in a spill of Stybarrow Crude to the marine environment. Through review of hydrocarbon spill modelling, and with consideration of a 10 ppb dissolved and entrained hydrocarbon threshold, the following AMPs may be contacted in the event of a spill:</p> <ul style="list-style-type: none"> • Carnarvon Canyon • Gascoyne • Ningaloo
<p>Griffin Gas Export Pipeline Decommissioning EP (Commonwealth)</p>	<p>The worst-case credible spill scenario assessed in this EP is the remote likelihood event of a vessel collision resulting a spill of marine diesel to the marine environment. Through review of hydrocarbon spill modelling, and with consideration of a 10 ppb dissolved and entrained hydrocarbon threshold, the following AMPs may be contacted in the event of a spill:</p> <ul style="list-style-type: none"> • Abrolhos • Argo-Rowley Terrace • Carnarvon Canyon • Gascoyne • Montebello • Shark Bay • Ningaloo

Stybarrow End State Decommissioning Environment Plan

A Commonwealth Government-approved oil spill response plan will be in place for the duration of the activities, which will include notification to relevant agencies and organisations as to the nature and scale of the event, as soon as practicable following an occurrence. The Director of National Parks will be advised if an environmental incident occurs that may impact on the values of the Marine Park.

Feedback:

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plan which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA. Please provide your views by **17 March 2023**.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

2.15 Email sent to the DBCA (16 February 2023)

Dear DBCA

Woodside is planning to undertake subsea decommissioning activities for the Griffin and Stybarrow fields (previously operated by BHP Petroleum Pty Ltd (BHP)).

The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

A summary of proposed activities is outlined below, and more detailed information is provided in the attached Consultation Information Sheets. The Information Sheets provide details on activities proposed to be managed under a number of Environment Plans for each Field, including a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

Please let us know if you would like to update previous feedback or have any additional views by **17 March 2023**.

Activity:

	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	Removal Activities <ul style="list-style-type: none">Removal of subsea equipment (wellheads, trees, distribution skids, risers, flexible flowlines, rigid	Plugging and Abandonment (P&A) Activities <ul style="list-style-type: none">Pre-execution activities associated with the well P&A,

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	<p>flowlines, umbilicals, and the pipeline end module (PLEM)).</p> <ul style="list-style-type: none"> • Removal of the Riser Turret Mooring (RTM) and its moorings. Depending on the vessel utilised, recovery of the RTM may require sections of it to be towed to shallower water out of the title. • Removal of an exploration wellhead (Ramillies-1 in neighbouring petroleum title WA-12-L). • Ongoing field management activities. • Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) within Commonwealth waters. <p>In Situ Activities</p> <ul style="list-style-type: none"> • Proposal to leave in situ 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the PLEM and 4 distribution skids. 	<p>such as barrier testing and removal of marine growth.</p> <ul style="list-style-type: none"> • Well P&A of the 10 productions/injection wells by placing cement plugs in the wells to permanently prevent hydrocarbon release. • Cutting and removal of the wellhead and subsea tree assembly. • Unblocking of the H4 flowline, if deemed feasible. <p>Removal Activities</p> <ul style="list-style-type: none"> • Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, and umbilicals). • Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment. • Ongoing field management activities (equipment monitoring and inspection). <p>In Situ Activities</p> <ul style="list-style-type: none"> • Proposed leave in situ of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be removed following its drilling and abandonment in 2003.
Location:	<ul style="list-style-type: none"> • 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> • 53 km northwest of Exmouth, Western Australia.
Approx. Water Depth (m):	<ul style="list-style-type: none"> • Approx. 120 m. 	<ul style="list-style-type: none"> • Approx. 810 – 850 m.
Schedule:	<p>Removal Activities</p> <ul style="list-style-type: none"> • Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. • Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> • Earliest P&A start is estimated to be Q4 2023, subject to approvals, MODU and vessel availability and weather constraints. • P&A activities must be completed no later than 30 September 2024, pursuant to General Direction 833.

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		<p>Removal Activities</p> <ul style="list-style-type: none"> • Earliest facilities and DTM removal is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. • Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.
Duration:	<p>Removal Activities</p> <ul style="list-style-type: none"> • Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> • P&A activities are anticipated to take approximately 6 – 9 months. <p>Removal Activities</p> <ul style="list-style-type: none"> • Removal activities are anticipated to take approximately 4-6 months to complete and DTM removal activities are anticipated to take approximately 1 month to complete.
Exclusionary/Cautious Zone:	<p>Removal Activities</p> <ul style="list-style-type: none"> • The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the equipment. • A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow activities. 	<p>P&A Activities</p> <ul style="list-style-type: none"> • The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centers within WA-32-L. • A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities. <p>Removal Activities</p> <ul style="list-style-type: none"> • The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads. • The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. • A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. • A temporary 500 m exclusion zone will apply around the HLV and the associated project

Stybarrow End State Decommissioning Environment Plan

		vessels during the removal of the DTM.
Vessels:	<p>Removal Activities</p> <ul style="list-style-type: none"> • Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. • An anchor handling tug (AHT) to support the towing of the RTM to sheltered water. 	<p>P&A activities</p> <ul style="list-style-type: none"> • Semi-Submersible Mobile Offshore Drilling Unit (MODU) • The MODU will be supported by 2 to 3 offshore support vessels. <p>Removal Activities</p> <ul style="list-style-type: none"> • CSV and HLV for recovery and activities. • AHTs to support the towing of the DTM to the shallower water location (if required).

Protected Area implications:

We note Australian Government Guidance on consultation activities and confirm that:

Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
<ul style="list-style-type: none"> • Proposed activities are outside the boundaries of a proclaimed Australian Marine Park. • Nearest protected areas are: <ul style="list-style-type: none"> ○ ~76 km to Gascoyne Commonwealth Marine Park ○ ~59 km to Ningaloo Marine Park (Commonwealth) ○ ~41 km to Ningaloo Marine Park (State) ○ ~42km to Muiron Islands Marine Management Area 	<ul style="list-style-type: none"> • Proposed activities are outside the boundaries of a proclaimed Australian Marine Park. • Nearest protected areas are: <ul style="list-style-type: none"> ○ ~5 km to Gascoyne Commonwealth Marine Park ○ ~24 km to Ningaloo Marine Park (Commonwealth) ○ ~36 km to Ningaloo Marine Park (State) ○ ~45 km to Muiron Islands Marine Management Area

We have assessed potential risks to Protected Areas in the development of the proposed Environment Plan and believe that there are no credible risks as part of planned activities that have potential to impact the values of Western Australian Protected Areas.

However, we note a number of State-managed Protected Areas within the Environments that May be Affected for the Griffin and Stybarrow decommissioning activities, in particular the EMBA for proposed plugging and abandonment activities at the Stybarrow Field. We have attached a separate information sheet for these activities and would be pleased to provide additional information on Conservation Parks, Marine Management Areas, Marine Parks, National Parks and Nature Reserves that may be potentially affected by activity risks.

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. DBCA will be advised if an environmental incident occurs that may impact on the values of State Managed Protected Areas.

Feedback:

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Stybarrow End State Decommissioning Environment Plan

Your feedback and our response will be included in our Environment Plan which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA. Please provide your views by **17 March 2023**.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

2.16 Email sent to the Exmouth Community Liaison Group (16 February 2023)

Dear Exmouth Community Liaison Group,

Woodside is providing this update on the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

We are providing this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

A summary of proposed activities is outlined below, and more detailed information is provided in the attached Consultation Information Sheets. The Information Sheets provide details on activities proposed to be managed under a number of Environment Plans for each Field, including a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). Please let us know if you would like to update previous feedback or have any additional views by **17 March 2023**.

Activity:

	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, distribution skids, risers, flexible flowlines, rigid flowlines, umbilicals, and the pipeline end module (PLEM)). Removal of the Riser Turret Mooring (RTM) and its moorings. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Pre-execution activities associated with the well P&A, such as barrier testing and removal of marine growth. Well P&A of the 10 productions/injection wells by placing cement plugs in the

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	<p>Depending on the vessel utilised, recovery of the RTM may require sections of it to be towed to shallower water out of the title.</p> <ul style="list-style-type: none"> Removal of an exploration wellhead (Ramillies-1 in neighbouring petroleum title WA-12-L). Ongoing field management activities. Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) within Commonwealth waters. <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposal to leave in situ 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the PLEM and 4 distribution skids. 	<p>wells to permanently prevent hydrocarbon release.</p> <ul style="list-style-type: none"> Cutting and removal of the wellhead and subsea tree assembly. Unblocking of the H4 flowline, if deemed feasible. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, and umbilicals). Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment. Ongoing field management activities (equipment monitoring and inspection). <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposed leave in situ of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be removed following its drilling and abandonment in 2003.
Location:	<ul style="list-style-type: none"> 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> 53 km northwest of Exmouth, Western Australia.
Approx. Water Depth (m):	<ul style="list-style-type: none"> Approx. 120 m. 	<ul style="list-style-type: none"> Approx. 810 – 850 m.
Schedule:	<p>Removal Activities</p> <ul style="list-style-type: none"> Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Earliest P&A start is estimated to be Q4 2023, subject to

	<p>availability and weather constraints.</p> <ul style="list-style-type: none"> Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>approvals, MODU and vessel availability and weather constraints.</p> <ul style="list-style-type: none"> P&A activities must be completed no later than 30 September 2024, pursuant to General Direction 833. <p>Removal Activities</p> <ul style="list-style-type: none"> Earliest facilities and DTM removal is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.
Duration:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> P&A activities are anticipated to take approximately 6 – 9 months. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 4-6 months to complete and DTM removal activities are anticipated to take approximately 1 month to complete.
Exclusionary/Cautious Zone:	<p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the equipment. A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow activities. 	<p>P&A Activities</p> <ul style="list-style-type: none"> The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centres within WA-32-L. A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.

		<p>Removal Activities</p> <ul style="list-style-type: none"> • The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads. • The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. • A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. • A temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.
<p>Vessels:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. • An anchor handling tug (AHT) to support the towing of the RTM to sheltered water. 	<p>P&A activities</p> <ul style="list-style-type: none"> • Semi-Submersible Mobile Offshore Drilling Unit (MODU) • The MODU will be supported by 2 to 3 offshore support vessels. <p>Removal Activities</p> <ul style="list-style-type: none"> • CSV and HLV for recovery and activities. • AHTs to support the towing of the DTM to the shallower water location (if required).

Feedback:

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plan which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Stybarrow End State Decommissioning Environment Plan

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA. Please provide your views by **17 March 2023**.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

2.17 Email sent to the Cape Conservation Group Chair (17 February 2023)

Dear [REDACTED]

Woodside is providing this update on the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

We are providing this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

A summary of proposed activities is outlined below, and more detailed information is provided in the attached Consultation Information Sheets. The Information Sheets provide details on activities proposed to be managed under a number of Environment Plans for each Field, including a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). Please let us know if you would like to update previous feedback or have any additional views by **17 March 2023**.

Activity:

	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	Removal Activities <ul style="list-style-type: none">Removal of subsea equipment (wellheads, trees, distribution skids, risers, flexible flowlines, rigid flowlines, umbilicals, and the pipeline end module (PLEM)).Removal of the Riser Turret Mooring (RTM) and its moorings. Depending on the vessel utilised, recovery of the RTM	Plugging and Abandonment (P&A) Activities <ul style="list-style-type: none">Pre-execution activities associated with the well P&A, such as barrier testing and removal of marine growth.Well P&A of the 10 productions/injection wells by placing cement plugs in the wells to permanently prevent hydrocarbon release.

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	<ul style="list-style-type: none"> may require sections of it to be towed to shallower water out of the title. Removal of an exploration wellhead (Ramillies-1 in neighbouring petroleum title WA-12-L). Ongoing field management activities. Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) within Commonwealth waters. <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposal to leave in situ 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the PLEM and 4 distribution skids. 	<ul style="list-style-type: none"> Cutting and removal of the wellhead and subsea tree assembly. Unblocking of the H4 flowline, if deemed feasible. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, and umbilicals). Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment. Ongoing field management activities (equipment monitoring and inspection). <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposed leave in situ of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be removed following its drilling and abandonment in 2003.
Location:	<ul style="list-style-type: none"> 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> 53 km northwest of Exmouth, Western Australia.
Approx. Water Depth (m):	<ul style="list-style-type: none"> Approx. 120 m. 	<ul style="list-style-type: none"> Approx. 810 – 850 m.
Schedule:	<p>Removal Activities</p> <ul style="list-style-type: none"> Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Earliest P&A start is estimated to be Q4 2023, subject to approvals, MODU and vessel availability and weather constraints.

	<ul style="list-style-type: none"> Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<ul style="list-style-type: none"> P&A activities must be completed no later than 30 September 2024, pursuant to General Direction 833. <p>Removal Activities</p> <ul style="list-style-type: none"> Earliest facilities and DTM removal is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.
Duration:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> P&A activities are anticipated to take approximately 6 – 9 months. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 4-6 months to complete and DTM removal activities are anticipated to take approximately 1 month to complete.
Exclusionary/Cautious Zone:	<p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the equipment. A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow activities. 	<p>P&A Activities</p> <ul style="list-style-type: none"> The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centres within WA-32-L. A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities. <p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area

		<p>includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads.</p> <ul style="list-style-type: none"> • The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. • A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. • A temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.
<p>Vessels:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. • An anchor handling tug (AHT) to support the towing of the RTM to sheltered water. 	<p>P&A activities</p> <ul style="list-style-type: none"> • Semi-Submersible Mobile Offshore Drilling Unit (MODU) • The MODU will be supported by 2 to 3 offshore support vessels. <p>Removal Activities</p> <ul style="list-style-type: none"> • CSV and HLV for recovery and activities. • AHTs to support the towing of the DTM to the shallower water location (if required).

Feedback:

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plan which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA. Please provide your views by **17 March 2023**.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

2.18 Email sent to Protect Ningaloo (17 February 2023)

Dear Stakeholder

Woodside is providing this update on the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

We are providing this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

A summary of proposed activities is outlined below, and more detailed information is provided in the attached Consultation Information Sheets. The Information Sheets provide details on activities proposed to be managed under a number of Environment Plans for each Field, including a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). Please let us know if you would like to update previous feedback or have any additional views by **17 March 2023**.

Activity:

	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, distribution skids, risers, flexible flowlines, rigid flowlines, umbilicals, and the pipeline end module (PLEM)). Removal of the Riser Turret Mooring (RTM) and its moorings. Depending on the vessel utilised, recovery of the RTM may require sections of it to be towed to shallower water out of the title. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Pre-execution activities associated with the well P&A, such as barrier testing and removal of marine growth. Well P&A of the 10 productions/injection wells by placing cement plugs in the wells to permanently prevent hydrocarbon release. Cutting and removal of the wellhead and subsea tree assembly.

	<ul style="list-style-type: none"> Removal of an exploration wellhead (Ramillies-1 in neighbouring petroleum title WA-12-L). Ongoing field management activities. Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) within Commonwealth waters. <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposal to leave in situ 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the PLEM and 4 distribution skids. 	<ul style="list-style-type: none"> Unblocking of the H4 flowline, if deemed feasible. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, and umbilicals). Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment. Ongoing field management activities (equipment monitoring and inspection). <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposed leave in situ of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be removed following its drilling and abandonment in 2003.
Location:	<ul style="list-style-type: none"> 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> 53 km northwest of Exmouth, Western Australia.
Approx. Water Depth (m):	<ul style="list-style-type: none"> Approx. 120 m. 	<ul style="list-style-type: none"> Approx. 810 – 850 m.
Schedule:	<p>Removal Activities</p> <ul style="list-style-type: none"> Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Facilities removal must be completed no later than 31 December 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Earliest P&A start is estimated to be Q4 2023, subject to approvals, MODU and vessel availability and weather constraints. P&A activities must be completed no later than 30 September 2024,

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	2024, pursuant to General Direction 832.	<p>pursuant to General Direction 833.</p> <p>Removal Activities</p> <ul style="list-style-type: none"> • Earliest facilities and DTM removal is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. • Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.
Duration:	<p>Removal Activities</p> <ul style="list-style-type: none"> • Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> • P&A activities are anticipated to take approximately 6 – 9 months. <p>Removal Activities</p> <ul style="list-style-type: none"> • Removal activities are anticipated to take approximately 4-6 months to complete and DTM removal activities are anticipated to take approximately 1 month to complete.
Exclusionary/Cautious Zone:	<p>Removal Activities</p> <ul style="list-style-type: none"> • The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the equipment. • A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow activities. 	<p>P&A Activities</p> <ul style="list-style-type: none"> • The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centres within WA-32-L. • A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities. <p>Removal Activities</p> <ul style="list-style-type: none"> • The temporary Operational Area includes the area encompassing an approximate 1,500 m

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		<p>radius around the subsea infrastructure and wellheads.</p> <ul style="list-style-type: none"> • The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. • A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. • A temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.
<p>Vessels:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. • An anchor handling tug (AHT) to support the towing of the RTM to sheltered water. 	<p>P&A activities</p> <ul style="list-style-type: none"> • Semi-Submersible Mobile Offshore Drilling Unit (MODU) • The MODU will be supported by 2 to 3 offshore support vessels. <p>Removal Activities</p> <ul style="list-style-type: none"> • CSV and HLV for recovery and activities. • AHTs to support the towing of the DTM to the shallower water location (if required).

Feedback:

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plan which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA. Please provide your views by **17 March 2023**.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

2.19 Email sent to the Shire of Exmouth (17 February 2023)

Dear [REDACTED]

Woodside is providing this update on the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

We are providing this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

A summary of proposed activities is outlined below, and more detailed information is provided in the attached Consultation Information Sheets. The Information Sheets provide details on activities proposed to be managed under a number of Environment Plans for each Field, including a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). Please let us know if you would like to update previous feedback or have any additional views by **17 March 2023**.

Activity:

	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	<p>Removal Activities</p> <ul style="list-style-type: none"> • Removal of subsea equipment (wellheads, trees, distribution skids, risers, flexible flowlines, rigid flowlines, umbilicals, and the pipeline end module (PLEM)). • Removal of the Riser Turret Mooring (RTM) and its moorings. Depending on the vessel utilised, recovery of the RTM may require sections of it to be towed to shallower water out of the title. • Removal of an exploration wellhead (Ramillies-1 in neighbouring 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> • Pre-execution activities associated with the well P&A, such as barrier testing and removal of marine growth. • Well P&A of the 10 productions/injection wells by placing cement plugs in the wells to permanently prevent hydrocarbon release. • Cutting and removal of the wellhead and subsea tree assembly. • Unblocking of the H4 flowline, if deemed feasible. <p>Removal Activities</p>

	<p>petroleum title WA-12-L).</p> <ul style="list-style-type: none"> Ongoing field management activities. Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) within Commonwealth waters. <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposal to leave in situ 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the PLEM and 4 distribution skids. 	<ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, and umbilicals). Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment. Ongoing field management activities (equipment monitoring and inspection). <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposed leave in situ of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be removed following its drilling and abandonment in 2003.
Location:	<ul style="list-style-type: none"> 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> 53 km northwest of Exmouth, Western Australia.
Approx. Water Depth (m):	<ul style="list-style-type: none"> Approx. 120 m. 	<ul style="list-style-type: none"> Approx. 810 – 850 m.
Schedule:	<p>Removal Activities</p> <ul style="list-style-type: none"> Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Earliest P&A start is estimated to be Q4 2023, subject to approvals, MODU and vessel availability and weather constraints. P&A activities must be completed no later than 30 September 2024, pursuant to General Direction 833. <p>Removal Activities</p>

		<ul style="list-style-type: none"> • Earliest facilities and DTM removal is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. • Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.
<p>Duration:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> • P&A activities are anticipated to take approximately 6 – 9 months. <p>Removal Activities</p> <ul style="list-style-type: none"> • Removal activities are anticipated to take approximately 4-6 months to complete and DTM removal activities are anticipated to take approximately 1 month to complete.
<p>Exclusionary/Cautious Zone:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the equipment. • A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow activities. 	<p>P&A Activities</p> <ul style="list-style-type: none"> • The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centres within WA-32-L. • A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities. <p>Removal Activities</p> <ul style="list-style-type: none"> • The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads.

		<ul style="list-style-type: none"> • The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. • A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. • A temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.
<p>Vessels:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. • An anchor handling tug (AHT) to support the towing of the RTM to sheltered water. 	<p>P&A activities</p> <ul style="list-style-type: none"> • Semi-Submersible Mobile Offshore Drilling Unit (MODU) • The MODU will be supported by 2 to 3 offshore support vessels. <p>Removal Activities</p> <ul style="list-style-type: none"> • CSV and HLV for recovery and activities. • AHTs to support the towing of the DTM to the shallower water location (if required).

Feedback:

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plan which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA. Please provide your views by **17 March 2023**.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

2.20 Email sent to the Shire of Ashburton (17 February 2023)

Dear [REDACTED]

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Stybarrow End State Decommissioning Environment Plan

Woodside is providing this update on the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

We are providing this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

A summary of proposed activities is outlined below, and more detailed information is provided in the attached Consultation Information Sheets. The Information Sheets provide details on activities proposed to be managed under a number of Environment Plans for each Field, including a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). Please let us know if you would like to update previous feedback or have any additional views by **17 March 2023**.

Activity:

	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, distribution skids, risers, flexible flowlines, rigid flowlines, umbilicals, and the pipeline end module (PLEM)). Removal of the Riser Turret Mooring (RTM) and its moorings. Depending on the vessel utilised, recovery of the RTM may require sections of it to be towed to shallower water out of the title. Removal of an exploration wellhead (Ramillies-1 in neighbouring petroleum title WA-12-L). 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Pre-execution activities associated with the well P&A, such as barrier testing and removal of marine growth. Well P&A of the 10 productions/injection wells by placing cement plugs in the wells to permanently prevent hydrocarbon release. Cutting and removal of the wellhead and subsea tree assembly. Unblocking of the H4 flowline, if deemed feasible. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, manifolds, risers,

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	<ul style="list-style-type: none"> Ongoing field management activities. Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) within Commonwealth waters. <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposal to leave in situ 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the PLEM and 4 distribution skids. 	<p>flexible flowlines, and umbilicals).</p> <ul style="list-style-type: none"> Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment. Ongoing field management activities (equipment monitoring and inspection). <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposed leave in situ of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be removed following its drilling and abandonment in 2003.
Location:	<ul style="list-style-type: none"> 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> 53 km northwest of Exmouth, Western Australia.
Approx. Water Depth (m):	<ul style="list-style-type: none"> Approx. 120 m. 	<ul style="list-style-type: none"> Approx. 810 – 850 m.
Schedule:	<p>Removal Activities</p> <ul style="list-style-type: none"> Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Earliest P&A start is estimated to be Q4 2023, subject to approvals, MODU and vessel availability and weather constraints. P&A activities must be completed no later than 30 September 2024, pursuant to General Direction 833. <p>Removal Activities</p> <ul style="list-style-type: none"> Earliest facilities and DTM removal is estimated to be Q4 2023, subject to

		<p>approvals, vessel availability and weather constraints.</p> <ul style="list-style-type: none"> Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.
Duration:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> P&A activities are anticipated to take approximately 6 – 9 months. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 4-6 months to complete and DTM removal activities are anticipated to take approximately 1 month to complete.
Exclusionary/Cautious Zone:	<p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the equipment. A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow activities. 	<p>P&A Activities</p> <ul style="list-style-type: none"> The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centres within WA-32-L. A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities. <p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads. The DTM has an existing 1200 m radius petroleum safety zone which will continue to

		<p>be in place until it is removed.</p> <ul style="list-style-type: none"> • A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. • A temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.
Vessels:	<p>Removal Activities</p> <ul style="list-style-type: none"> • Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. • An anchor handling tug (AHT) to support the towing of the RTM to sheltered water. 	<p>P&A activities</p> <ul style="list-style-type: none"> • Semi-Submersible Mobile Offshore Drilling Unit (MODU) • The MODU will be supported by 2 to 3 offshore support vessels. <p>Removal Activities</p> <ul style="list-style-type: none"> • CSV and HLV for recovery and activities. • AHTs to support the towing of the DTM to the shallower water location (if required).

Feedback:

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plan which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA. Please provide your views by **17 March 2023**.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

2.21 Email sent to the University of Western Australia (UWA) (21 February 2023)

Dear ■

Woodside is providing this update on the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

Stybarrow End State Decommissioning Environment Plan

We are providing this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

A summary of proposed activities is outlined below, and more detailed information is provided in the attached Consultation Information Sheets. The Information Sheets provide details on activities proposed to be managed under a number of Environment Plans for each Field, including a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Woodside is seeking your advice regarding any research activities that UWA may be undertaking that may overlap with our proposed activities.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

Please let us know if you would like to update previous feedback or have any additional views by **17 March 2023**.

Activity:

	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, distribution skids, risers, flexible flowlines, rigid flowlines, umbilicals, and the pipeline end module (PLEM)). Removal of the Riser Turret Mooring (RTM) and its moorings. Depending on the vessel utilised, recovery of the RTM may require sections of it to be towed to shallower water out of the title. Removal of an exploration wellhead (Ramillies-1 in neighbouring petroleum title WA-12-L). Ongoing field management activities. Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Pre-execution activities associated with the well P&A, such as barrier testing and removal of marine growth. Well P&A of the 10 productions/injection wells by placing cement plugs in the wells to permanently prevent hydrocarbon release. Cutting and removal of the wellhead and subsea tree assembly. Unblocking of the H4 flowline, if deemed feasible. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, and umbilicals). Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the

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	<p>(GEP) within Commonwealth waters.</p> <p>In Situ Activities</p> <ul style="list-style-type: none"> • Proposal to leave in situ 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the PLEM and 4 distribution skids. 	<p>DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment.</p> <ul style="list-style-type: none"> • Ongoing field management activities (equipment monitoring and inspection). <p>In Situ Activities</p> <ul style="list-style-type: none"> • Proposed leave in situ of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be removed following its drilling and abandonment in 2003.
Location:	<ul style="list-style-type: none"> • 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> • 53 km northwest of Exmouth, Western Australia.
Approx. Water Depth (m):	<ul style="list-style-type: none"> • Approx. 120 m. 	<ul style="list-style-type: none"> • Approx. 810 – 850 m.
Schedule:	<p>Removal Activities</p> <ul style="list-style-type: none"> • Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. • Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> • Earliest P&A start is estimated to be Q4 2023, subject to approvals, MODU and vessel availability and weather constraints. • P&A activities must be completed no later than 30 September 2024, pursuant to General Direction 833. <p>Removal Activities</p> <ul style="list-style-type: none"> • Earliest facilities and DTM removal is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. • Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.
Duration:	<p>Removal Activities</p> <ul style="list-style-type: none"> • Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> • P&A activities are anticipated to take approximately 6 – 9 months. <p>Removal Activities</p> <ul style="list-style-type: none"> • Removal activities are anticipated to take approximately 4-6 months to complete and DTM removal

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		activities are anticipated to take approximately 1 month to complete.
Exclusionary/Cautious Zone:	<p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the equipment. A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow activities. 	<p>P&A Activities</p> <ul style="list-style-type: none"> The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centres within WA-32-L. A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities. <p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads. The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. A temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.
Vessels:	<p>Removal Activities</p> <ul style="list-style-type: none"> Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. An anchor handling tug (AHT) to support the towing of the RTM to sheltered water. 	<p>P&A activities</p> <ul style="list-style-type: none"> Semi-Submersible Mobile Offshore Drilling Unit (MODU) The MODU will be supported by 2 to 3 offshore support vessels. <p>Removal Activities</p> <ul style="list-style-type: none"> CSV and HLV for recovery and activities. AHTs to support the towing of the DTM to the shallower water location (if required).

Feedback:

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Stybarrow End State Decommissioning Environment Plan

Your feedback and our response will be included in our Environment Plan which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA.

Please provide your views by **17 March 2023**.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

2.22 Email sent to the Western Australian Marine Science Institution (WAMSI) (21 February 2023)

Dear [REDACTED]

Woodside is providing this update on the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

We are providing this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

A summary of proposed activities is outlined below, and more detailed information is provided in the attached Consultation Information Sheets. The Information Sheets provide details on activities proposed to be managed under a number of Environment Plans for each Field, including a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Woodside is seeking your advice regarding any research activities that WAMSI may be undertaking that may overlap with our proposed activities.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

Please let us know if you would like to update previous feedback or have any additional views by **17 March 2023**.

Activity:

	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	Removal Activities <ul style="list-style-type: none">Removal of subsea equipment (wellheads, trees, distribution skids, risers,	Plugging and Abandonment (P&A) Activities <ul style="list-style-type: none">Pre-execution activities associated with the well P&A,

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	<p>flexible flowlines, rigid flowlines, umbilicals, and the pipeline end module (PLEM)).</p> <ul style="list-style-type: none"> • Removal of the Riser Turret Mooring (RTM) and its moorings. Depending on the vessel utilised, recovery of the RTM may require sections of it to be towed to shallower water out of the title. • Removal of an exploration wellhead (Ramillies-1 in neighbouring petroleum title WA-12-L). • Ongoing field management activities. • Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) within Commonwealth waters. <p>In Situ Activities</p> <ul style="list-style-type: none"> • Proposal to leave in situ 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the PLEM and 4 distribution skids. 	<p>such as barrier testing and removal of marine growth.</p> <ul style="list-style-type: none"> • Well P&A of the 10 productions/injection wells by placing cement plugs in the wells to permanently prevent hydrocarbon release. • Cutting and removal of the wellhead and subsea tree assembly. • Unblocking of the H4 flowline, if deemed feasible. <p>Removal Activities</p> <ul style="list-style-type: none"> • Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, and umbilicals). • Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment. • Ongoing field management activities (equipment monitoring and inspection). <p>In Situ Activities</p> <ul style="list-style-type: none"> • Proposed leave in situ of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be removed following its drilling and abandonment in 2003.
Location:	<ul style="list-style-type: none"> • 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> • 53 km northwest of Exmouth, Western Australia.
Approx. Water Depth (m):	<ul style="list-style-type: none"> • Approx. 120 m. 	<ul style="list-style-type: none"> • Approx. 810 – 850 m.
Schedule:	<p>Removal Activities</p> <ul style="list-style-type: none"> • Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. • Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> • Earliest P&A start is estimated to be Q4 2023, subject to approvals, MODU and vessel availability and weather constraints. • P&A activities must be completed no later than 30 September 2024, pursuant to General Direction 833.

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		<p>Removal Activities</p> <ul style="list-style-type: none"> • Earliest facilities and DTM removal is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. • Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.
<p>Duration:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> • P&A activities are anticipated to take approximately 6 – 9 months. <p>Removal Activities</p> <ul style="list-style-type: none"> • Removal activities are anticipated to take approximately 4-6 months to complete and DTM removal activities are anticipated to take approximately 1 month to complete.
<p>Exclusionary/Cautious Zone:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the equipment. • A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow activities. 	<p>P&A Activities</p> <ul style="list-style-type: none"> • The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centers within WA-32-L. • A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities. <p>Removal Activities</p> <ul style="list-style-type: none"> • The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads. • The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. • A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. • A temporary 500 m exclusion zone will apply around the HLV and the associated project

		vessels during the removal of the DTM.
Vessels:	<p>Removal Activities</p> <ul style="list-style-type: none"> • Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. • An anchor handling tug (AHT) to support the towing of the RTM to sheltered water. 	<p>P&A activities</p> <ul style="list-style-type: none"> • Semi-Submersible Mobile Offshore Drilling Unit (MODU) • The MODU will be supported by 2 to 3 offshore support vessels. <p>Removal Activities</p> <ul style="list-style-type: none"> • CSV and HLV for recovery and activities. • AHTs to support the towing of the DTM to the shallower water location (if required).

Feedback:

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plan which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA.

Please provide your views by **17 March 2023**.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

2.23 Email sent to the Maritime Union of Australia (MUA) (21 February 2023)

Dear [REDACTED]

Woodside is providing this update on the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

We are providing this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

A summary of proposed activities is outlined below, and more detailed information is provided in the attached Consultation Information Sheets. The Information Sheets provide details on activities proposed to be managed under a number of Environment Plans for each Field, including a summary

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Stybarrow End State Decommissioning Environment Plan

of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

Please let us know if you would like to update previous feedback or have any additional views by **17 March 2023**.

Activity:

	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, distribution skids, risers, flexible flowlines, rigid flowlines, umbilicals, and the pipeline end module (PLEM)). Removal of the Riser Turret Mooring (RTM) and its moorings. Depending on the vessel utilised, recovery of the RTM may require sections of it to be towed to shallower water out of the title. Removal of an exploration wellhead (Ramillies-1 in neighbouring petroleum title WA-12-L). Ongoing field management activities. Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) within Commonwealth waters. <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposal to leave in situ 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the PLEM and 4 distribution skids. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Pre-execution activities associated with the well P&A, such as barrier testing and removal of marine growth. Well P&A of the 10 productions/injection wells by placing cement plugs in the wells to permanently prevent hydrocarbon release. Cutting and removal of the wellhead and subsea tree assembly. Unblocking of the H4 flowline, if deemed feasible. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, and umbilicals). Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment. Ongoing field management activities (equipment monitoring and inspection). <p>In Situ Activities</p>

		<ul style="list-style-type: none"> Proposed leave in situ of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be removed following its drilling and abandonment in 2003.
Location:	<ul style="list-style-type: none"> 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> 53 km northwest of Exmouth, Western Australia.
Approx. Water Depth (m):	<ul style="list-style-type: none"> Approx. 120 m. 	<ul style="list-style-type: none"> Approx. 810 – 850 m.
Schedule:	<p>Removal Activities</p> <ul style="list-style-type: none"> Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Earliest P&A start is estimated to be Q4 2023, subject to approvals, MODU and vessel availability and weather constraints. P&A activities must be completed no later than 30 September 2024, pursuant to General Direction 833. <p>Removal Activities</p> <ul style="list-style-type: none"> Earliest facilities and DTM removal is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.
Duration:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> P&A activities are anticipated to take approximately 6 – 9 months. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 4-6 months to complete and DTM removal activities are anticipated to take approximately 1 month to complete.

<p>Exclusionary/Cautious Zone:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the equipment. • A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow activities. 	<p>P&A Activities</p> <ul style="list-style-type: none"> • The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centers within WA-32-L. • A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities. <p>Removal Activities</p> <ul style="list-style-type: none"> • The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads. • The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. • A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. • A temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.
<p>Vessels:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. • An anchor handling tug (AHT) to support the towing of the RTM to sheltered water. 	<p>P&A activities</p> <ul style="list-style-type: none"> • Semi-Submersible Mobile Offshore Drilling Unit (MODU) • The MODU will be supported by 2 to 3 offshore support vessels. <p>Removal Activities</p> <ul style="list-style-type: none"> • CSV and HLV for recovery and activities. • AHTs to support the towing of the DTM to the shallower water location (if required).

Feedback:

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Stybarrow End State Decommissioning Environment Plan

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plan which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA.

Please provide your views by **17 March 2023**.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

2.24 Email sent to Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC) (21 February 2023)

Dear [REDACTED]

Firstly, thank you for your assistance in arranging the meeting between NTGAC and Woodside on 16 February. It was a pleasure to meet the NTGAC Board and YMAC staff. We were most grateful for the opportunity to provide information about our plans and to learn of NTGAC's questions. We will write separately to thank the NTGAC Board for the meeting.

As was discussed during our meeting, please find attached information about Woodside's decommissioning and drilling activities. With the exception of removing the Nganhurra Riser Turret Mooring, for which Woodside seeks NTGAC's feedback soonest, Woodside is seeking feedback on these decommissioning and drilling activities by 17 March. The plain English summary of each of these activities is attached, and I have provided a link to the more detailed consultation information sheets below. To recap, these activities are:

Decommissioning Activities:

- Removal of the Nganhurra Riser Turret Mooring (RTM). Information about the RTM was previously emailed on 18 January. For ease of reference, the summary information is attached and the consultation information sheet for the RTM can be found at the link below.
 - [consultation-information-sheet---nganhurra-operations-cessation-environment-plan-revision.pdf \(woodside.com\)](#)
- Stybarrow. This involves two work activities that are subject to separate environment plans; plug and abandonment (P&A), and decommissioning.
 - [consultation-information-sheet---stybarrow-plug-and-abandonment-environment-plan.pdf \(woodside.com\)](#)
 - [Consultation Information Sheet - Stybarrow Decommissioning Environment Plans \(woodside.com\)](#)
- Griffin decommissioning.
 - [consultation-information-sheet---griffin-decommissioning-environment-plans.pdf \(woodside.com\)](#)

Drilling Activities:

- TPA03 Well Intervention.
 - [Consultation Information Sheet - TPA03 Well Intervention Environment Plan \(woodside.com\)](#)
- WA-34-L Pyxis Drilling and Subsea Installation.
 - [Consultation Information Sheet - WA-34-L Pyxis Drilling and Subsea Installation Environment Plan \(woodside.com\)](#)
- Julimar Appraisal Drilling.

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- [Consultation Information Sheet - Julimar Appraisal Drilling and Survey Environment Plan \(woodside.com\)](#)

Woodside also looks forward to receiving NTGAC's feedback on the four Scarborough project activities as soon as is possible.

In providing this information and requests for feedback, I acknowledge [REDACTED] email of 20 February outlining NTGAC's request of Woodside to provide funding for YMAC's in-house environmental scientist to undertake a review of the RTM environmental plan. [REDACTED] will be in contact with [REDACTED] directly about this in the coming days.

Thanks again [REDACTED] for your assistance last week, your consideration of these matters and for your work to progress these important consultations.

Yours sincerely

2.25 Email sent to Yinggarda Aboriginal Corporation (YAC) via Yamatji Marlpa Aboriginal Corporation (YMAC) (22 February 2023)

Dear [REDACTED]

I hope this message finds you well.

Further to my correspondence of 18 January regarding Woodside's plan to remove the Nganhurra Riser Turret Mooring (RTM), and [REDACTED] correspondence of 20 January regarding Woodside's Scarborough project, please find attached information about Woodside's decommissioning and drilling activities that we are seeking to consult with Yinggarda Aboriginal Corporation (YAC) about.

With the exception of removing the Nganhurra RTM and the Scarborough project, for which Woodside is seeking YAC's feedback as soon as possible, Woodside is seeking YAC's feedback on these decommissioning and drilling activities by 17 March. The plain English summary of each of these activities is attached, and I have provided a link to the more detailed consultation information sheets below. These activities are:

Decommissioning Activities:

- Removal of the Nganhurra Riser Turret Mooring (RTM). Information about the RTM was previously emailed on 18 January. For ease of reference, the summary information is attached and the consultation information sheet for the RTM can be found at the link below.
 - [consultation-information-sheet---nganhurra-operations-cessation-environment-plan-revision.pdf \(woodside.com\)](#)
- Stybarrow. This involves two work activities that are subject to separate environment plans; plug and abandonment (P&A) of the wells and decommissioning the infrastructure.
 - [consultation-information-sheet---stybarrow-plug-and-abandonment-environment-plan.pdf \(woodside.com\)](#)
 - [Consultation Information Sheet - Stybarrow Decommissioning Environment Plans \(woodside.com\)](#)
- Griffin decommissioning.
 - [consultation-information-sheet---griffin-decommissioning-environment-plans.pdf \(woodside.com\)](#)

Drilling Activities:

- TPA03 Well Intervention.
 - [Consultation Information Sheet - TPA03 Well Intervention Environment Plan \(woodside.com\)](#)
- WA-34-L Pyxis Drilling and Subsea Installation.
 - [Consultation Information Sheet - WA-34-L Pyxis Drilling and Subsea Installation Environment Plan \(woodside.com\)](#)
- Julimar Appraisal Drilling.

Stybarrow End State Decommissioning Environment Plan

o Consultation Information Sheet - Julimar Appraisal Drilling and Survey Environment Plan (woodside.com)

In providing this information and requests for feedback, I acknowledge [REDACTED] correspondence of 6 February and my response of 10 February in which we discussed arrangements for a meeting between YAC and Woodside. Woodside would be most grateful for the opportunity to meet with YAC, at YAC's earliest convenience, and at a location suitable to YAC. Woodside would also be pleased to provide the resources necessary to hold this meeting and we look forward to receiving a budget for consideration. If there is anything else, we can do at this time to facilitate consultation about these planned work activities please let me know.

Thank you, [REDACTED] for yours, YAC's and YMAC's consideration of these matters and work to progress these important consultations.

As always, please feel free to contact me on the details below if you require further information or assistance.

Yours sincerely

2.26 Email sent to Yamatji Marlpa Aboriginal Corporation (YMAC) (13 March 2023)

Good afternoon [REDACTED]

Thank you again for your time taken meeting with me and [REDACTED] today.

As discussed, I would be grateful if you could please advise whether YMAC considers itself a 'relevant person' under subregulation 11 A (1) of the Environment Regulations for the purposes of consultation on environment plans and, if so, whether that relevance is limited to a facilitation function in its capacity as a representative of Traditional Owner groups/corporations that overlap or adjacent to the environment that may be affected (EMBA) of a particular activity.

Please reach out at any time if you need to discuss further.

Kind regards

2.27 Email sent to Commonwealth Scientific and Industrial Research Organisation (CSIRO) – 21 February 2023

Dear [REDACTED]

Woodside is providing this update on the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

We are providing this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

A summary of proposed activities is outlined below, and more detailed information is provided in the attached Consultation Information Sheets. The Information Sheets provide details on activities proposed to be managed under a number of Environment Plans for each Field, including a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Woodside is seeking your advice regarding any research activities that UWA may be undertaking that may overlap with our proposed activities.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

Please let us know if you would like to update previous feedback or have any additional views by **17 March 2023**.

Activity:

	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	<p>Removal Activities</p> <ul style="list-style-type: none"> • Removal of subsea equipment (wellheads, trees, distribution skids, risers, flexible flowlines, rigid flowlines, umbilicals, and the pipeline end module (PLEM)). • Removal of the Riser Turret Mooring (RTM) and its moorings. Depending on the vessel utilised, recovery of the RTM may require sections of it to be towed to shallower water out of the title. • Removal of an exploration wellhead (Ramillies-1 in neighbouring petroleum title WA-12-L). • Ongoing field management activities. • Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) within Commonwealth waters. <p>In Situ Activities</p> <ul style="list-style-type: none"> • Proposal to leave in situ 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the PLEM and 4 distribution skids. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> • Pre-execution activities associated with the well P&A, such as barrier testing and removal of marine growth. • Well P&A of the 10 productions/injection wells by placing cement plugs in the wells to permanently prevent hydrocarbon release. • Cutting and removal of the wellhead and subsea tree assembly. • Unblocking of the H4 flowline, if deemed feasible. <p>Removal Activities</p> <ul style="list-style-type: none"> • Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, and umbilicals). • Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment. • Ongoing field management activities (equipment monitoring and inspection). <p>In Situ Activities</p>

		<ul style="list-style-type: none"> Proposed leave in situ of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be removed following its drilling and abandonment in 2003.
Location:	<ul style="list-style-type: none"> 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> 53 km northwest of Exmouth, Western Australia.
Approx. Water Depth (m):	<ul style="list-style-type: none"> Approx. 120 m. 	<ul style="list-style-type: none"> Approx. 810 – 850 m.
Schedule:	<p>Removal Activities</p> <ul style="list-style-type: none"> Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Earliest P&A start is estimated to be Q4 2023, subject to approvals, MODU and vessel availability and weather constraints. P&A activities must be completed no later than 30 September 2024, pursuant to General Direction 833. <p>Removal Activities</p> <ul style="list-style-type: none"> Earliest facilities and DTM removal is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.
Duration:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> P&A activities are anticipated to take approximately 6 – 9 months. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 4-6 months to complete and DTM removal activities are anticipated to take approximately 1 month to complete.
Exclusionary/Cautious Zone:	<p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the equipment. 	<p>P&A Activities</p> <ul style="list-style-type: none"> The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centers within WA-32-L.

Stybarrow End State Decommissioning Environment Plan

	<ul style="list-style-type: none"> • A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow activities. 	<ul style="list-style-type: none"> • A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities. <p>Removal Activities</p> <ul style="list-style-type: none"> • The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads. • The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. • A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. • A temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.
<p>Vessels:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. • An anchor handling tug (AHT) to support the towing of the RTM to sheltered water. 	<p>P&A activities</p> <ul style="list-style-type: none"> • Semi-Submersible Mobile Offshore Drilling Unit (MODU) • The MODU will be supported by 2 to 3 offshore support vessels. <p>Removal Activities</p> <ul style="list-style-type: none"> • CSV and HLV for recovery and activities. • AHTs to support the towing of the DTM to the shallower water location (if required).

Feedback:

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plan which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA.

Please provide your views by **17 March 2023**.

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You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

2.28 Email sent to Australian institute of Marine Science (AIMS) – 21 February 2023

Dear [REDACTED]

Woodside is providing this update on the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

We are providing this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

A summary of proposed activities is outlined below, and more detailed information is provided in the attached Consultation Information Sheets. The Information Sheets provide details on activities proposed to be managed under a number of Environment Plans for each Field, including a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Woodside is seeking your advice regarding any research activities that AIMS may be undertaking that may overlap with our proposed activities.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

Please let us know if you would like to update previous feedback or have any additional views by **17 March 2023**.

Activity:

	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	<p>Removal Activities</p> <ul style="list-style-type: none"> • Removal of subsea equipment (wellheads, trees, distribution skids, risers, flexible flowlines, rigid flowlines, umbilicals, and the pipeline end module (PLEM)). • Removal of the Riser Turret Mooring (RTM) and its moorings. Depending on the vessel utilised, recovery of 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> • Pre-execution activities associated with the well P&A, such as barrier testing and removal of marine growth. • Well P&A of the 10 productions/injection wells by placing cement plugs in the wells to permanently prevent hydrocarbon release.

	<p>the RTM may require sections of it to be towed to shallower water out of the title.</p> <ul style="list-style-type: none"> Removal of an exploration wellhead (Ramillies-1 in neighbouring petroleum title WA-12-L). Ongoing field management activities. Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) within Commonwealth waters. <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposal to leave in situ 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the PLEM and 4 distribution skids. 	<ul style="list-style-type: none"> Cutting and removal of the wellhead and subsea tree assembly. Unblocking of the H4 flowline, if deemed feasible. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, and umbilicals). Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment. Ongoing field management activities (equipment monitoring and inspection). <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposed leave in situ of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be removed following its drilling and abandonment in 2003.
Location:	<ul style="list-style-type: none"> 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> 53 km northwest of Exmouth, Western Australia.
Approx. Water Depth (m):	<ul style="list-style-type: none"> Approx. 120 m. 	<ul style="list-style-type: none"> Approx. 810 – 850 m.
Schedule:	<p>Removal Activities</p> <ul style="list-style-type: none"> Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Earliest P&A start is estimated to be Q4 2023, subject to approvals, MODU and vessel availability and weather constraints. P&A activities must be completed no later than 30 September 2024, pursuant to General Direction 833. <p>Removal Activities</p> <ul style="list-style-type: none"> Earliest facilities and DTM removal is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints.

		<ul style="list-style-type: none"> Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.
Duration:	Removal Activities <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete. 	Plugging and Abandonment (P&A) Activities <ul style="list-style-type: none"> P&A activities are anticipated to take approximately 6 – 9 months. Removal Activities <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 4-6 months to complete and DTM removal activities are anticipated to take approximately 1 month to complete.
Exclusionary/Cautious Zone:	Removal Activities <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the equipment. A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow activities. 	P&A Activities <ul style="list-style-type: none"> The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centers within WA-32-L. A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities. Removal Activities <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads. The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. A temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.
Vessels:	Removal Activities <ul style="list-style-type: none"> Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. 	P&A activities <ul style="list-style-type: none"> Semi-Submersible Mobile Offshore Drilling Unit (MODU)

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	<ul style="list-style-type: none"> An anchor handling tug (AHT) to support the towing of the RTM to sheltered water. 	<ul style="list-style-type: none"> The MODU will be supported by 2 to 3 offshore support vessels. <p>Removal Activities</p> <ul style="list-style-type: none"> CSV and HLV for recovery and activities. AHTs to support the towing of the DTM to the shallower water location (if required).
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Feedback:

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plan which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA.

Please provide your views by **17 March 2023**.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

2.29 Email sent to Ningaloo Coast World Heritage Advisory Committee (NCWHAC) – 16 February 2023

Dear Ningaloo World Heritage Area Committee

Woodside is providing this update on the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

We are providing this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

A summary of proposed activities is outlined below, and more detailed information is provided in the attached Consultation Information Sheets. The Information Sheets provide details on activities proposed to be managed under a number of Environment Plans for each Field, including a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Stybarrow End State Decommissioning Environment Plan

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

Please let us know if you would like to update previous feedback or have any additional views by **17 March 2023**.

Activity:

	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, distribution skids, risers, flexible flowlines, rigid flowlines, umbilicals, and the pipeline end module (PLEM)). Removal of the Riser Turret Mooring (RTM) and its moorings. Depending on the vessel utilised, recovery of the RTM may require sections of it to be towed to shallower water out of the title. Removal of an exploration wellhead (Ramillies-1 in neighbouring petroleum title WA-12-L). Ongoing field management activities. Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) within Commonwealth waters. <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposal to leave in situ 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the PLEM and 4 distribution skids. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Pre-execution activities associated with the well P&A, such as barrier testing and removal of marine growth. Well P&A of the 10 productions/injection wells by placing cement plugs in the wells to permanently prevent hydrocarbon release. Cutting and removal of the wellhead and subsea tree assembly. Unblocking of the H4 flowline, if deemed feasible. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, and umbilicals). Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment. Ongoing field management activities (equipment monitoring and inspection). <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposed leave in situ of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be removed following its drilling and abandonment in 2003.

Stybarrow End State Decommissioning Environment Plan

Location:	<ul style="list-style-type: none"> 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> 53 km northwest of Exmouth, Western Australia.
Approx. Water Depth (m):	<ul style="list-style-type: none"> Approx. 120 m. 	<ul style="list-style-type: none"> Approx. 810 – 850 m.
Schedule:	<p>Removal Activities</p> <ul style="list-style-type: none"> Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Earliest P&A start is estimated to be Q4 2023, subject to approvals, MODU and vessel availability and weather constraints. P&A activities must be completed no later than 30 September 2024, pursuant to General Direction 833. <p>Removal Activities</p> <ul style="list-style-type: none"> Earliest facilities and DTM removal is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.
Duration:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> P&A activities are anticipated to take approximately 6 – 9 months. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 4-6 months to complete and DTM removal activities are anticipated to take approximately 1 month to complete.
Exclusionary/Cautious Zone:	<p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the equipment. A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow activities. 	<p>P&A Activities</p> <ul style="list-style-type: none"> The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centers within WA-32-L. A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities. <p>Removal Activities</p>

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		<ul style="list-style-type: none"> • The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads. • The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. • A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. • A temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.
<p>Vessels:</p>	<p>Removal Activities</p> <ul style="list-style-type: none"> • Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. • An anchor handling tug (AHT) to support the towing of the RTM to sheltered water. 	<p>P&A activities</p> <ul style="list-style-type: none"> • Semi-Submersible Mobile Offshore Drilling Unit (MODU) • The MODU will be supported by 2 to 3 offshore support vessels. <p>Removal Activities</p> <ul style="list-style-type: none"> • CSV and HLV for recovery and activities. • AHTs to support the towing of the DTM to the shallower water location (if required).

Feedback:

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plan which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA.

Please provide your views by **17 March 2023**.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

2.30 Email sent to Western Deepwater Trawl Fishery – 17 February 2023

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Stybarrow End State Decommissioning Environment Plan

Woodside is providing this update on the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

We are providing this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

The Stybarrow Field is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Operational Areas and Exclusion Zones will apply around a range of vessels that will support plugging and abandonment and infrastructure recovery and removal activities, which are outlined in the activity summaries below.

A summary of proposed activities is outlined below and more detailed information is provided in the attached Consultation Information Sheets, including a summary of potential key risks and associated management measures. The Information Sheets are also available on our website.

Fisheries have been identified as being relevant based on fishing licence overlap with the activity area, assessment of government fishing effort data (including Fishcube and AFMA) from recent years, fishing methods and water depth.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). Please let us know if you would like to update previous feedback or have any additional views by 17 March 2023.

Activity:

	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, distribution skids, risers, flexible flowlines, rigid flowlines, umbilicals, and the pipeline end module (PLEM)). Removal of the Riser Turret Mooring (RTM) and its moorings. Depending on the vessel utilised, recovery of the RTM may require sections of it to be towed to shallower water out of the title. Removal of an exploration wellhead (Ramillies-1 in neighbouring petroleum title WA-12-L). 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Pre-execution activities associated with the well P&A, such as barrier testing and removal of marine growth. Well P&A of the 10 productions/injection wells by placing cement plugs in the wells to permanently prevent hydrocarbon release. Cutting and removal of the wellhead and subsea tree assembly. Unblocking of the H4 flowline, if deemed feasible. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, manifolds,

	<ul style="list-style-type: none"> Ongoing field management activities. Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) within Commonwealth waters. <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposal to leave in situ 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the PLEM and 4 distribution skids. 	<ul style="list-style-type: none"> risers, flexible flowlines, and umbilicals). Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment. Ongoing field management activities (equipment monitoring and inspection). <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposed leave in situ of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical exploration wellhead, Eskdale-1, which was unable to be removed following its drilling and abandonment in 2003.
Location:	<ul style="list-style-type: none"> 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> 53 km northwest of Exmouth, Western Australia.
Approx. Water Depth (m):	<ul style="list-style-type: none"> Approx. 120 m. 	<ul style="list-style-type: none"> Approx. 810 – 850 m.
Schedule:	<p>Removal Activities</p> <ul style="list-style-type: none"> Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Earliest P&A start is estimated to be Q4 2023, subject to approvals, MODU and vessel availability and weather constraints. P&A activities must be completed no later than 30 September 2024, pursuant to General Direction 833. <p>Removal Activities</p> <ul style="list-style-type: none"> Earliest facilities and DTM removal is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.
Duration:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> P&A activities are anticipated to take approximately 6 – 9 months.

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	take approximately 2 months to complete.	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 4-6 months to complete and DTM removal activities are anticipated to take approximately 1 month to complete.
Exclusionary/Cautious Zone:	<p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the equipment. A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow activities. 	<p>P&A Activities</p> <ul style="list-style-type: none"> The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centers within WA-32-L. A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities. <p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads. The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. A temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.
Vessels:	<p>Removal Activities</p> <ul style="list-style-type: none"> Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. An anchor handling tug (AHT) to support the towing of the RTM to sheltered water. 	<p>P&A activities</p> <ul style="list-style-type: none"> Semi-Submersible Mobile Offshore Drilling Unit (MODU) The MODU will be supported by 2 to 3 offshore support vessels. <p>Removal Activities</p> <ul style="list-style-type: none"> CSV and HLV for recovery and activities. AHTs to support the towing of the DTM to the shallower water location (if required).

Commonwealth-managed fishery implications:

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Stybarrow End State Decommissioning Environment Plan

We note there are three overlapping Commonwealth managed fisheries (listed below) in the Environments that May Be Affected (EMBA)s for the Griffin and Stybarrow decommissioning projects, of which the Western Deepwater Trawl Fishery may have been active in the Stybarrow Operational Area (see attached Information Sheets for more details).

- Western Tuna and Billfish
- North West Slope Trawl
- Western Deepwater Trawl

Woodside is consulting licence holders in these fisheries, as well as providing information to representative organisations on AFMA advice that it expects all Commonwealth fishers who have entitlements to fish within the proposed area to be consulted, which can be through the relevant fishing industry associations.

Feedback:

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plan which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA. Please provide your views by **17 March 2023**.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

Woodside Feedback

2.31 Email sent to Greenpeace Australia Pacific (GAP) – 2 June 2023

Dear [REDACTED]

Woodside notes Greenpeace Australia Pacific (GAP) received Woodside's updated consultation information with respect to its proposed decommissioning of the Stybarrow field under the following environment plans (EPs) on 14 February 2023 via Woodside's consultation activities website subscription:

- Stybarrow Plug and Abandonment (P&A) EP
- Stybarrow Decommissioning and Field Management EP
- Stybarrow Field Deviation EP

The Consultation Information Sheet for the proposed activities is re-attached for reference, which includes a summary of potential key risks and associated management measures. The information sheet is also available on our website.

Please let us know if you would like to provide feedback with respect to the above proposed EPs by 9 June 2023.

Regards,

2.32 Newspaper Advertisements in The Australian, The West Australian, North West Telegraph, Pilbara News, Midwest Times (15 February 2023) and the Geraldton Guardian (17 February 2023)

ENVIRONMENT PLAN NOTICE

Woodside Energy (Australia) Pty Ltd (ACN 006 403 607) is preparing to conduct decommissioning activities in Commonwealth waters, as described below:

Geraldton Decommissioning and Field Management Environment Plan		Stybarrow Plug and Abandonment Environment Plan	
Activity summary:	Field management and removal of subsurface infrastructure above the seafloor, including the Ryan Tunnel Flooding (TFM).	Activity summary:	The permanent plugging and abandonment of the low Stybarrow subsurface development wells by placing cement plugs in the wells to prevent hydrocarbon release.
Location:	43 km northwest of Onslow	Location:	12 km northwest of Onslow
Commencement timing:	Anticipated around December or 2023, pending approvals, vessel availability and weather constraints.	Commencement timing:	Anticipated around late 2023 or 2024, pending approvals, vessel availability and weather constraints.
Estimated duration:	Approximately 6 months.	Estimated duration:	4 to 6 months.
Consultation commenced:	Oct 2022 Final EIP submission to NOPSEMA: Dec 2022	Consultation commenced:	May 2022 Final EIP submission to NOPSEMA: Not yet submitted

Geraldton Gas Export Pipeline Environment Plan		Stybarrow Decommissioning and Field Management Environment Plan	
Activity summary:	Preparation for and subsequent removal of 36 km of gas export pipeline and associated stationing.	Activity summary:	Field management and removal of subsurface infrastructure above the seafloor including the Onslow-Ternville Tunnel Flooding (TFM).
Location:	39 km northwest of Onslow	Location:	12 km northwest of Onslow
Commencement timing:	Anticipated around second half of 2023, pending approvals, vessel availability and weather constraints.	Commencement timing:	Anticipated around Q4 2023, pending approvals, vessel availability and weather constraints.
Estimated duration:	Approximately 2 months.	Estimated duration:	4 months.
Consultation commenced:	Jan 2022 Final EIP submission to NOPSEMA: Mar 2022	Consultation commenced:	Feb 2022 Final EIP submission to NOPSEMA: Apr 2022

Geraldton Field Develoap Environment Plan		Stybarrow Field Develoap Environment Plan	
Activity summary:	Preparation and in situ grout in place of non-bore infrastructure embedded in the seabed to remove seabed disturbance anchors, piles, concrete gravity bases.	Activity summary:	Prepared in situ grout in place of infrastructure embedded in the seabed to remove seabed disturbance anchors, piles.
Location:	44 km northwest of Onslow	Location:	12 km northwest of Onslow
Commencement timing:	Upon environmental plan acceptance and following completion of removal activities.	Commencement timing:	Upon environmental plan acceptance and following completion of removal activities.
Estimated duration:	No duration - infrastructure to be left in situ.	Estimated duration:	No duration - infrastructure to be left in situ.
Consultation commenced:	Jan 2022 Final EIP submission to NOPSEMA: Feb 2022	Consultation commenced:	May 2022 Final EIP submission to NOPSEMA: Jul 2022

Figure 1: Stybarrow and Figure 2: Geraldton Describe the Operational Areas and the Environment that may be affected (EPA) based on a composite of many different paths and for the distance where a highly unlikely unplanned event could have an impact based on weather and ocean conditions.

Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned and unplanned activities. Mitigation and management measures have been developed for each of the risks identified and will be included in the relevant EIP.

Impacts associated with routine decommissioning activities include the physical presence or release of debris (e.g. PVCs) and vessels, interaction with other marine users, decommissioning discharge (cement, chemicals, residual hydrocarbons), seabed disturbance, emissions from burning, venting and other vessel impacts (noise, light, air emissions and marine discharges). Impacts that could occur due to an unplanned event include hydrocarbon releases (gas, liquid, marine debris or other vessel issues), vessel collisions with marine users, additional seabed disturbance, introduced marine species, accretions or waste or other discharges.

Figure 1 and Figure 2 illustrate indicative EPAs to support persons or organisations under standing or whether their functions, interests or activities may be affected by the proposed activities, with detailed information found in Woodside's Consultation Information Sheets.

Consultation Participation and Feedback

Woodside is willing to consult with relevant persons to inform the preparation of Environment Plans (EPs) for the Stybarrow and Geraldton decommissioning activities. Consultation is designed to identify and obtain input from relevant persons to assist Woodside develop measures to assess or avoid potential adverse effects of the proposed activity on the environment.

Consultation will inform the development of each EIP in accordance with environmental regulations administered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) under the Offshore Petroleum and Greenhouse Gas Storage Act 2004 (OPGSSA) and support other regulatory submissions associated with the planned activities.

Detailed consultation information sheets are available at: www.woodside.com.au/sustainability

consultation activities if you would like additional information about Stybarrow and Geraldton decommissioning activities. You can also subscribe via our website to receive future information on proposed activities.

If you would like to comment on the proposed activities outlined above, please contact Woodside before Friday 17 March 2023 via:

E: Feedback@woodside.com
Tel: 1800 422 077

Figure 1: Stybarrow

Figure 2: Geraldton

ENVIRONMENT PLAN NOTICE

Woodside Energy (Australia) Pty Ltd (ACN006 62 387) is proposing to conduct decommissioning activities in Commonwealth waters, as described below:

Offshore Decommissioning and Field Management Decommissioning Plans

Activity summary:	Field management and removal of subsea infrastructure above the midline, including the Blair Tunnel Mooring (BTM)		
Location:	~45 km southwest of Onslow		
Commencement date:	Anticipated around second half of 2023, pending approvals, vessel availability and weather constraints		
Estimated duration:	Approximately 6 months		
Consentation commenced:	Oct 2021	First IP in Intention to HOPSMA:	Dec 2021

Offshore Gas Export Pipeline Decommissioning Plan

Activity summary:	Preparation for and subsequent removal of ~36 km of gas export pipeline and associated stabilisation		
Location:	~30-40 km southwest of Onslow		
Commencement date:	Anticipated around second half of 2023, pending approvals, vessel availability and weather constraints		
Estimated duration:	Approximately 2 months		
Consentation commenced:	Jan 2022	First IP in Intention to HOPSMA:	Mar 2022

Offshore Field Decommissioning Plan

Activity summary:	Proposed in situ (leave in place) of most non-toxic infrastructure embedded in the seabed to minimise seabed disturbance (anchors, piles, concrete gravity bases)		
Location:	~40 km southwest of Onslow		
Commencement date:	Up to one to one to begin acceptance and following completion of removal activities		
Estimated duration:	No duration - infrastructure to be left in situ		
Consentation commenced:	Jan 2022	First IP in Intention to HOPSMA:	Feb 2022

Shallow Field and Abandonment Decommissioning Plan

Activity summary:	The permanent plugging and abandonment of the Blair Diggins subsea development wells by placing cement plugs in the wells to prevent hydrocarbon release		
Location:	~43 km southwest of Onslow		
Commencement date:	Anticipated around late 2022 to 2023, pending approvals, vessel availability and weather constraints		
Estimated duration:	~4 to 6 months		
Consentation commenced:	May 2022	First IP in Intention to HOPSMA:	Not yet submitted

Shallow Decommissioning and Field Management Decommissioning Plan

Activity summary:	Field management and removal of subsea infrastructure above the midline including the De-commissioning Tunnel Mooring (DTM)		
Location:	~43 km southwest of Onslow		
Commencement date:	Anticipated around Oct 2023, pending approvals, vessel availability and weather constraints		
Estimated duration:	~6 months		
Consentation commenced:	Feb 2022	First IP in Intention to HOPSMA:	Apr 2022

Shallow Field Decommissioning Plan

Activity summary:	Proposed in situ (leave in place) of infrastructure embedded in the seabed to minimise seabed disturbance (anchors, piles)		
Location:	~43 km southwest of Onslow		
Commencement date:	Up to one to one to begin acceptance and following completion of removal activities		
Estimated duration:	No duration - infrastructure to be left in situ		
Consentation commenced:	May 2022	First IP in Intention to HOPSMA:	Jul 2022

Figure 1 (Stybarrow) and Figure 2 (Goffs) Offshore Decommissioning Plans

Figure 1 (Stybarrow) and Figure 2 (Goffs) Offshore Decommissioning Plans describe the operational areas and the sub-sea infrastructure that may be affected (SIA) located in a complex of many different depths and farthest distance where a highly unlikely, unplanned event could have an impact based on weather and ocean conditions.

Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned and unplanned activities. Mitigation and management measures have been developed for each of the risks identified and will be subject to the review and sign-off.

Impacts associated with routine decommissioning activities include the physical presence of a Mobile Offshore Drilling Unit (MODU) and vessel, interaction with other marine users, decommissioning discharges (cement slurry, hydrocarbon, hydrocarbons, seabed disturbance, emissions from flaring/venting and other vessel impacts (noise, light, air emissions and marine discharges). Impacts that could occur include an unplanned event resulting in hydrocarbon release (crude, gas, marine diesel) or other vessel safety vessel collisions with marine fauna, additional seabed disturbance, hydrocarbon marine species, accidental loss of waste or other discharges.

Figure 1 and Figure 2 illustrate the SIA for Stybarrow and Goffs decommissioning activities. Stybarrow and Goffs decommissioning activities or operations undertaken during the decommissioning process, including the physical presence of a Mobile Offshore Drilling Unit (MODU) and vessel, interaction with other marine users, decommissioning discharges (cement slurry, hydrocarbon, hydrocarbons, seabed disturbance, emissions from flaring/venting and other vessel impacts (noise, light, air emissions and marine discharges). Impacts that could occur include an unplanned event resulting in hydrocarbon release (crude, gas, marine diesel) or other vessel safety vessel collisions with marine fauna, additional seabed disturbance, hydrocarbon marine species, accidental loss of waste or other discharges.



Figure 1 Stybarrow Field



Figure 2 Goffs Field

Consentation Participation and Feedback

Woodside is seeking to consult with relevant persons to inform the preparation of Environment Plans (EP) for the Stybarrow and Goffs decommissioning activities. Consultation is designed to notify and obtain input from relevant persons to assist Woodside identify measures to lessen or avoid potential adverse effects of the proposed activities on the environment.

Detailed consultation information that is available at: www.woodside.com.au/sustainability/consultation-activities if you would like additional information about Stybarrow and Goffs decommissioning activities. You can also subscribe to our website to receive future information on proposed activities.

Consultation will inform the development of each EP in accordance with environmental regulations administered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) under the Offshore Petroleum and Greenhouse Gas Storage Act 2020 (OPGSA) and support other regulatory submissions associated with the planned activities.

If you would like to comment on the proposed activities outlined above, please contact Woodside before Friday, 17 March 2023 via: EPFeedback@woodside.com.au or telephone 9188 442377

EMPLOYMENT

Administration and Finance

LEGAL SECRETARY
The position is based in Perth, Western Australia. The role of this position includes the management and administration of the legal department. For more details visit www.woodside.com.au or contact HR on 9188 442377.

Building and Construction

FLOOR & WALL TILER
We are looking for experienced floor and wall tilers for our Perth office. For more details visit www.woodside.com.au or contact HR on 9188 442377.

Education and Teaching

TEACHERS OF ITALIAN PRIMARY
The Italo-Australian Welfare & Cultural Centre Inc. (IAWCC) is currently recruiting Teachers of ITALIAN to be assigned to teach volunteer primary schools, north and south of the river. For more details visit www.iawcc.org.au or contact HR on 9188 442377.

Mining and Resources

WESTAUZ MINING

Woodside Mining Pty Ltd is currently seeking experienced Mining Engineers for our Perth office. For more details visit www.woodside.com.au or contact HR on 9188 442377.

City of Stirling

INVITATION FOR TENDERS

Department of Internal (DICI) Road Light Circuit System. Tender Close: 1 March 2023. For more details visit www.cityofstirling.wa.gov.au or contact HR on 9188 442377.

Shire of Murray

Recruitment in Tender

Tenders are invited for the position of Chief Executive Officer. For more details visit www.shireofmurray.wa.gov.au or contact HR on 9188 442377.

Local Govt Vacancies

City of Melville

Corporate Services. The City of Melville has several vacancies in its Corporate Services department. For more details visit www.cityofmelville.wa.gov.au or contact HR on 9188 442377.

Shire of East Pilbara

PROSPECT FOR QUOTATION

Shire of East Pilbara is seeking quotations for the supply and installation of road lighting. For more details visit www.shireofeastpilbara.wa.gov.au or contact HR on 9188 442377.

Local Govt. Tenders

City of Joondalup

Procurement of Field Work and Services. The City of Joondalup is seeking tenders for field work and services. For more details visit www.cityofjoondalup.wa.gov.au or contact HR on 9188 442377.

City of Cambridge

PROSPECT FOR TENDERS

Large Volume Residential Gas-Furnace Units. The City of Cambridge is seeking tenders for large volume residential gas-furnace units. For more details visit www.cityofcambridge.wa.gov.au or contact HR on 9188 442377.

General Positions

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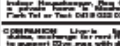
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Employment

City of Stirling

ENVIRONMENT PLAN NOTICE

Woodside Energy (Australia) Pty Ltd (ACN/004 823376) is proposing to conduct decommissioning activities in Commonwealth waters, as described below:

G419a Decommissioning of a Field Management Centre asset Plan

Activity summary:	Field management and removal of subsea infrastructure above the seafloor, including the fibre Turret Mooring (STM)
Location:	~45 km northwest of Onslow
Commencement if all set:	Anticipated around second half of 2023, pending approvals, vessel availability and weather constraints
Estimated duration:	Approximately 6 months
Commencement if all set:	Oct 2023
First EPA submission to NOPSPDA:	Dec 2023

G419a Gas Spill & Pipework Onslow asset Plan

Activity summary:	Preparation for and subsequent removal of ~26 km of gas export pipeline and associated stabilisation
Location:	~39-45 km northwest of Onslow
Commencement if all set:	Anticipated around second half of 2023, pending approvals, vessel availability and weather constraints
Estimated duration:	Approximately 2 months
Commencement if all set:	Jan 2022
First EPA submission to NOPSPDA:	Mar 2022

G419a Field Development Centre asset Plan

Activity summary:	Proposed lease in situ (leave in place) of in situ, non-toxic infrastructure embedded in the seabed to minimise seabed disturbance (anchors, piles, concrete gravity bases)
Location:	~45 km northwest of Onslow
Commencement if all set:	Upon environmental plan acceptance and following completion of remedial activities
Estimated duration:	No duration - infrastructure to be left in situ
Commencement if all set:	Jan 2022
First EPA submission to NOPSPDA:	Feb 2022

Stybarrow Plug and Abandonment Centre asset Plan

Activity summary:	The permanent plugging and abandonment of the in situ Stybarrow subsea development wells by placing cement plugs in the wells to prevent hydrocarbon release
Location:	~32 km northwest of Semauit
Commencement if all set:	Anticipated around late 2022 or 2023, pending approvals, vessel availability and weather constraints
Estimated duration:	4 to 6 months
Commencement if all set:	May 2022
First EPA submission to NOPSPDA:	Not yet submitted

Stybarrow Decommissioning of a Field Plan general Environment Plan

Activity summary:	Field management and removal of subsea infrastructure above the seafloor, including the fibre-connected Turret Mooring (STM)
Location:	~32 km northwest of Semauit
Commencement if all set:	Anticipated around Q4 2022, pending approvals, vessel availability and weather constraints
Estimated duration:	4 months
Commencement if all set:	Feb 2022
First EPA submission to NOPSPDA:	Apr 2022

Stybarrow Field 2 Onslow to Carbon Asset Plan

Activity summary:	Proposed lease in situ (leave in place) of infrastructure embedded in the seabed to minimise seabed disturbance (anchors, piles)
Location:	~32 km northwest of Semauit
Commencement if all set:	Upon environmental plan acceptance and following completion of remedial activities
Estimated duration:	No duration - infrastructure to be left in situ
Commencement if all set:	May 2022
First EPA submission to NOPSPDA:	Jul 2022

Figure 1 (Stybarrow) and Figure 2 (G419a) Describe the Operational Areas and the Domestic Territory Affecting (DTA) based on a composite of many different paths and furthest distance where a highly mobile, unpowered vessel could have an impact based on weather and operational limits.

Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned and unplanned activities. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the relevant EP. Impacts associated with the decommissioning activities include the physical presence of a highly offshore drilling vessel (HODV) and vessel

interaction with other marine users, decommissioning discharges (cement, chemicals, medical hydrocarbons), seabed disturbance, emissions from flaring, venting and other vessel impacts (noise, light, air emissions) and marine discharges (impacts that could occur due to an unplanned event include hydrocarbon releases, drilling gas, marine diesel or other vessel fuel), vessel collisions with marine fauna, additional seabed disturbance, introduced marine species, accidental loss of waste or other discharges.

Figure 1 and Figure 2 illustrate indicative DTAAs to support persons or organisations understanding of whether their functions, interests or activities may be affected by the proposed activities, with detailed information found in Woodside's Consultation Information Sheets.



Figure 1: Stybarrow Field



Figure 2: Griffin Field

Consultation Participation and Feedback

Woodside is seeking to consult with relevant persons to inform the preparation of Environment Plans (EPs) for the G419a and G419b decommissioning activities. Consultation is designed to notify and obtain input from relevant persons to assist Woodside identify measures to lessen or avoid potential adverse effects of the proposed activity on the environment.

Consultation will inform the development of each EP in accordance with new Commonwealth regulations administered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) under the Offshore Petroleum and Greenhouse Gas Storage Act 2016 (OPGGSA) and support other regulatory submissions associated with the proposed activities.

Detailed consultative information sheets are available at www.woodside.com.au/sustainability/consultation-activities if you would like additional information about Stybarrow and Griffin decommissioning activities. You can also subscribe via our website to receive future information on proposed activities.

If you would like to comment on the proposed activities outlined above, please contact Woodside before Friday, 17 March 2023 via:

E-Feedback@woodside.com.au

Tel: 1800 442 177

PUBLIC NOTICES



The Law Reform Commission of Western Australia

Call for submissions – review of Western Australia’s sexual offence laws

The Attorney General, the Hon. John Quigley MLA, asked the Law Reform Commission of Western Australia (LRC) to review WA’s sexual offence laws.

The LRC is examining issues including the definition of consent, the defence of mistaken belief in consent, the directions given to juries in sexual offence trials, our substantive sexual offences and their maximum penalties.

The LRC is to provide advice and recommend any necessary reforms to the Attorney General.

The LRC has published Volumes 1 and 2 of a Discussion Paper and a Background Paper. The Discussion Paper outlines options and poses questions about changing our sexual offence laws. The LRC commissioned the Background Paper from experts to help the LRC and the public understand the issues in this area of law. Volumes 1 and 2 of the Discussion Paper and the Background Paper are both available on the LRC’s website: www.lrc.justice.wa.gov.au

Individuals and organisations can provide a submission on one or more of the topics and questions in the Discussion Paper and Background Paper. Submissions on Volume 1 close on 17 March 2023. Submissions on Volume 2 close on 6 April 2023. For information about the various ways to make a submission please visit www.lrc.justice.wa.gov.au

The Commission will hold consultations with evidence groups and any organisations or persons who wish to contribute to less than 10% of the total register your interest in attending a consultation please email inquiries@lrc.wa.gov.au before 23 February 2023.

For more information visit www.lrc.justice.wa.gov.au

02/15/23

TENDERS

SHIRE OF EXMOUTH
REQUEST FOR QUOTE
RFQ 07/2023

Supply and Construction of Works Depot Storage Shed

The Shire of Exmouth is seeking suitably qualified and experienced builder for the supply and install of a 3 x 4 M storage shed at 17 Welch Street (Works Depot).

A copy of the RFP documentation is available from TenderLink, no other provision of documentation is available. Submissions must be lodged via TenderLink Portal – portal.tenderlink.com/exmouth

Canvassing of Councilors will be disqualify.

Submissions must be lodged via the TenderLink Portal no later than 2:00pm, Monday 27th February 2023.

Bon Lewis
CHIEF EXECUTIVE OFFICER

AUCTIONS

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Applicants must be Australian Citizens to meet Australian Government security requirements. You will be required to successfully undergo an Australian Government positive vetting (PV) security clearance.

More information on the security clearance vetting process is available on the Australian Government Security Vetting Agency (AGSVA) website (<https://www.ag.gov.au/security-clearance>).

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<https://jobs.boeing.com/> (search city: Geraldton, Western Australia)



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LA23_008

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ENVIRONMENT PLANS NOTICE

Woodside Energy (Australia) Pty Ltd (ACN 003 218 726), Woodside Energy Julimar Pty Ltd (ACN 003 233 034) and Woodside Group Pty Ltd (ACN 003 27 431) are proposing to conduct activities in Commonwealth waters as described below:

TPAD Well Intervention Core Remediation Plan (Woodside Energy Ltd)

Activity summary:	Activities on the TPAD production well to remediate a down-hole valve and continue production from the lower reservoir
Location:	-128 km north-west of Dampier
Commencement date:	Anticipated around mid 2023 pending approvals, vessel availability and weather constraints
Estimated duration:	-2 to 16 days and will take place 24 hours, 7 days a week
Class of activities commenced:	June 2022
First EP submission to NOPSONA:	August 2022

Julimar Drilling and Salvage Core Remediation Plan (Woodside Energy Julimar Pty Ltd)

Activity summary:	Geotechnical and geophysical surveys, drilling and appraisal of the Julimar South-1F well and, plugging and abandonment of Julimar South-1F required
Location:	-83 km north-west of Dampier
Commencement date:	Anticipated around second half of 2023 pending approvals, vessel availability and weather constraints
Estimated duration:	-45 days for drilling and capping, -65 days for geophysical and geotechnical surveys and 25 for decommissioning of the Julimar South-1F well. Activities will be conducted 24 hours per day, 7 days per week
Class of activities commenced:	August 2022
First EP submission to NOPSONA:	Not yet submitted

WA-34-L-7 well Drilling and Salvage Core Remediation Plan (Woodside Energy Pty Ltd)

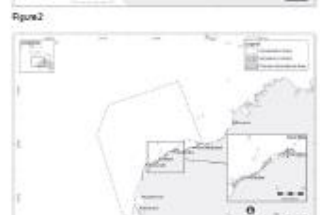
Activity summary:	Drilling and subsurface infrastructure for a gas well for one well (PL400) and capping well in western activities for current production wells
Location:	-70 km north-west of Dampier
Commencement date:	Anticipated around second half of 2023 pending approvals, vessel availability and weather constraints
Estimated duration:	-30 days for the PL400 well, -70 days per well for well intervention activities and -30 days for subsurface infrastructure. Activities will be conducted 24 hours per day, 7 days per week
Class of activities commenced:	June 2022
First EP submission to NOPSONA:	Not yet submitted



Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned and unplanned activities. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the relevant EP Impacts associated with the planned activities include the physical presence of a Mobile Offshore Drilling Unit (MODU) and vessels, interaction with other marine users, seabed disturbance such as infrastructure placement and other vessel drilling and construction impacts such as noise, light, air emissions and methane discharge. Impacts that could occur due to an unplanned event include hydrocarbon release (gasoline, marine diesel or other vessel fuel), vessel collision with marine fauna, additional hydrocarbon releases, non-catastrophic gas release, accidental loss of waste or other discharge.



Figure 1, Figure 2 and Figure 3 illustrate activities that will be undertaken to support personnel understanding of whether their functions, interests or activities may be affected by the proposed activities, with detailed information from the Woodside Consultation Information Sheets.



Consultation Period notice and Feedback
Woodside is seeking to consult with relevant persons to inform the preparation of Environment Plans (EPs) for these activities. Consultation is designed to notify and obtain input from relevant persons to assist Woodside identify measures to lessen or avoid potential adverse effects of the proposed activity on the environment.

Consultation will inform the development of each EP in accordance with environmental regulations administered by the Northern Territory Petroleum Entry and Environmental Management Authority (NOPSONA) under the Offshore Petroleum and Greenhouse Gas Storage Act 2016 (OPGSA) and support other regulatory submissions associated with the planned activities. Detailed consultation information sheets are available at: www.woodside.com.au/submit-feedback-activities that if you would like additional information about these activities. You can also subscribe to our website to receive future information on proposed activities.

If you would like to comment on the proposed activities outlined above, please contact Woodside before Friday, 17 March 2023 via:

C. Feedback@woodside.com
Toll free: 1833 482 877

ENVIRONMENT PLAN NOTICE

Woodside Energy (Australia) Pty Ltd (ACN 004 823 676) is proposing to conduct decommissioning activities in Commonwealth waters, as described below:

G 016a Decommissioning and Field Management: Environment Plan

Activity summary:	Field management and removal of subsurface infrastructure above the seabed, including the River Torii (RTM) (RTM)
Location:	~15 km northwest of Onslow
Commence/cease/finish date:	Anticipated around second half of 2023, pending approvals, vessel availability and weather constraints
Estimated duration:	Approximately 4 months
Commence/cease/finish date:	Oct 2021 First EP submission to NOPSDMA Dec 2021

G 016b Gas Export Pipeline Decommissioning Plan

Activity summary:	Preparation for and subsequent removal of ~26 km of gas export pipeline and associated stabilisation
Location:	~30-55 km northwest of Onslow
Commence/cease/finish date:	Anticipated around second half of 2023, pending approvals, vessel availability and weather constraints
Estimated duration:	Approximately 2 months
Commence/cease/finish date:	Jan 2022 First EP submission to NOPSDMA Mar 2022

G 016c Field Disturbance Mitigation Plan

Activity summary:	Proposed leave in situ (leave in place) of inert, non-toxic infrastructure embedded in the seabed to minimise seabed disturbance (anchors, piles, concrete gravity bases)
Location:	~15 km northwest of Onslow
Commence/cease/finish date:	Upon environment plan acceptance and following completion of removal activities
Estimated duration:	No duration – infrastructure to be left in situ
Commence/cease/finish date:	Jan 2022 First EP submission to NOPSDMA Feb 2022

Stybarrow Plug and Abandonment Environment Plan

Activity summary:	Trap cement plug and abandonment of the Stybarrow subsurface development wells by plugging cement plug into wells to prevent hydrocarbon release
Location:	~22 km northwest of Emuouth
Commence/cease/finish date:	Anticipated around late 2023 or 2024, pending approvals, vessel availability and weather constraints
Estimated duration:	4 to 6 months
Commence/cease/finish date:	May 2022 First EP submission to NOPSDMA Not yet submitted

Stybarrow Decommissioning and Field Management Environment Plan

Activity summary:	Field management and removal of subsurface infrastructure above the seabed including the Onslow Torii (OTM) (OTM)
Location:	~22 km northwest of Emuouth
Commence/cease/finish date:	Anticipated around Q4 2023, pending approvals, vessel availability and weather constraints
Estimated duration:	4 months
Commence/cease/finish date:	Feb 2022 First EP submission to NOPSDMA Apr 2022

Stybarrow Field Disturbance Mitigation Plan

Activity summary:	Proposed leave in situ (leave in place) of infrastructure embedded in the seabed to minimise seabed disturbance (anchors, piles)
Location:	~22 km northwest of Emuouth
Commence/cease/finish date:	Upon environment plan acceptance and following completion of removal activities
Estimated duration:	No duration – infrastructure to be left in situ
Commence/cease/finish date:	May 2022 First EP submission to NOPSDMA Jul 2022

Figure 1 (Stybarrow) and Figure 2 (Griffin) describe the Operational Area and the Decommissioning Area (DA) for the Stybarrow and Griffin decommissioning activities. The DA is based on a composite of many different pipes and further defined by a highly complex, irregular shape that could have an impact based on weather and ocean conditions.

Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both proposed decommissioning activities. Mitigation and management measures have been developed for each of the DA and will be detailed in the relevant EP. Impacts associated with the decommissioning activities include the physical presence of a Mobile Offshore Drilling Unit (MODU) and vessel.



Figure 1 - Stybarrow Field

Interaction with other marine users, decommissioning discharges (cement) and other hydrocarbon discharges, seabed disturbance, emissions from burning (venting and other vessel impacts such as light, air emissions and marine discharges) impacts that could occur due to an unplanned event including hydrocarbon releases (rodenticide gas, marine diesel or other vessel fuel), vessel collisions with marine fauna, additional seabed disturbance, introduced marine species, accidental loss of water or other discharges.

Figure 1 and Figure 2 illustrate indicative DA for Stybarrow and Griffin decommissioning activities. Information on whether the DA is to support operations or activities may be affected by the proposed activities, with detailed information found in Woodside's Consultation Information Sheets.



Figure 2 - Griffin Field

Consultation Participation and Feedback

Woodside is seeking to consult with relevant persons to inform the preparation of Environment Plans (EPs) for the Stybarrow and Griffin decommissioning activities. Consultation is designed to notify and obtain input from relevant persons to assist Woodside identify measures to lessen or avoid potential adverse effects of the proposed activities on the environment.

Consultation will inform the development of each EP in accordance with the relevant regulations administered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) under the Offshore Petroleum and Greenhouse Gas Storage Act 2004 (OPGSA) and support other regulatory submissions associated with the planned activities.

Detailed consultation information sheets are available at: www.woodside.com.au/sustainability/consultation-activities if you would like additional information about Stybarrow and Griffin decommissioning activities. You can also subscribe via our website to receive future information on proposed activities.

If you would like to comment on the proposed activities outlined above, please contact Woodside before Friday, 17 March 2023 via:

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Toll free: 1800 448 977

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ENVIRONMENT PLAN NOTICE

Woodside Energy (Australia) Pty Ltd (ACN004 923 876) proposing to conduct decommissioning activities in Commonwealth waters, as described below:

G of the Decommissioning and Field Management Control Plan

Activity summary:	Field management and removal of subsea infrastructure above the mudline, including the Eiser Tunnel Mooring (RTM)
Location:	~45 km northwest of Onslow
Commenced or expected start date:	Anticipated around second half of 2023, pending approvals, vessel availability and weather constraints
Estimated duration:	Approximately 4 months
Commenced or expected start date:	Oct 2021 First EPA submission to NOPS/DIA Dec 2021

G of the Gas Spill Response and Control Plan

Activity summary:	Preparation for and subsequent removal of 30 km of gas export pipeline and associated stabilisation
Location:	~39-62 km northwest of Onslow
Commenced or expected start date:	Anticipated around second half of 2023, pending approvals, vessel availability and weather constraints
Estimated duration:	Approximately 2 months
Commenced or expected start date:	Jan 2022 First EPA submission to NOPS/DIA Mar 2022

G of the Field Decommissioning Control Plan

Activity summary:	Proposed leave in situ (leave in place) of steel, non-toxic infrastructure embedded in the seabed to minimise seabed disturbance (anchors, piles, concrete gravity bases)
Location:	~45 km northwest of Onslow
Commenced or expected start date:	Upon environmental plan acceptance and following completion of remedial activities
Estimated duration:	No duration - infrastructure to be left in situ
Commenced or expected start date:	Jan 2022 First EPA submission to NOPS/DIA Feb 2022

Stybarrow Plug and Abandonment Control Plan

Activity summary:	The preparation, plugging and abandonment of the ten Stybarrow subsea development wells by placing cement plugs in the wells to prevent hydrocarbon release
Location:	~43 km northwest of Onslow
Commenced or expected start date:	Anticipated around 2023 or 2024, pending approvals, vessel availability and weather constraints
Estimated duration:	4 to 6 months
Commenced or expected start date:	May 2022 First EPA submission to NOPS/DIA Not yet submitted

Stybarrow Decommissioning and Field Management Control Plan

Activity summary:	Field management and removal of subsea infrastructure above the mudline including the Onslow-connectable Tunnel Mooring (RTM)
Location:	~43 km northwest of Onslow
Commenced or expected start date:	Anticipated around Q4 2023, pending approvals, vessel availability and weather constraints
Estimated duration:	4 months
Commenced or expected start date:	Feb 2022 First EPA submission to NOPS/DIA Apr 2022

Stybarrow Field Decommissioning Control Plan

Activity summary:	Proposed leave in situ (leave in place) of infrastructure embedded in the seabed to minimise seabed disturbance (anchors, piles)
Location:	~43 km northwest of Onslow
Commenced or expected start date:	Upon environmental plan acceptance and following completion of remedial activities
Estimated duration:	No duration - infrastructure to be left in situ
Commenced or expected start date:	May 2022 First EPA submission to NOPS/DIA Jul 2022

Figure 1 (Stybarrow) and Figure 2 (Griffin) describe the Operational Area and the Environment. The Operational Area (OEA) is based on a composite of many different depths and turbidities, which are highly variable, especially in winter. It could have an impact based on weather and oceanographic conditions.

Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned and unplanned activities. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the operational plan.

Impacts associated with the state decommissioning activities include the physical presence of a Mobile Offshore Drilling Unit (MODU) and vessel

interaction with other mariners, decommissioning discharges (primarily effluents, including hydrocarbons, seabed disturbance, emissions from fuel burning and other vessel impacts (noise, light, air emissions and marine discharge) impacts that could occur due to an unplanned event including discharge releases (prod/gas, marine diesel or other vessel fuels), vessel collisions with marine life, additional seabed disturbance, introduced marine species, accidental loss of waste or other discharges.

Figures 1 and 2 illustrate the OEA to support marine or organisations understanding of whether their functions, interests or activities may be affected by the proposed activities, with detailed information found in Woodside's Consultation Information Sheets.



Figure 1 Stybarrow Field



Figure 2 Griffin Field

Consultation Participation and Feedback

Woodside is seeking to consult with relevant persons to inform the preparation of Environment Plans (EPs) for the Stybarrow and Griffin decommissioning activities. Consultation is designed to identify and obtain input from relevant persons to assist Woodside identify measures to lessen or avoid potential adverse effects of the proposed activities on the environment.

Consultation will inform the development of each EP in accordance with environmental regulations administered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) under the Offshore Petroleum and Greenhouse Gas Storage Act 2020 (City and support other regulatory submissions associated with the proposed activities.

Detailed consultation information on these are available at www.woodside.com.au/stybarrow-griffin or if you would like additional information about Stybarrow and Griffin decommissioning activities. You can also subscribe via our website for future information on proposed activities.

If you would like to comment on the proposed activities outlined above, please contact Woodside before Friday, 17 March 2023 via:
E: Feedback@woodside.com.au
Toll-free 1800 442 877

PUBLIC NOTICES



Planning and Development Act 2015 LOCAL PLANNING SCHEME AMENDMENT AVAILABLE FOR INSPECTION STANDARD AMENDMENT

Shire of Northampton Local Planning Scheme No. 10 – Amendment No. 8 Notice is hereby given that the local government of the Shire of Northampton has prepared the above mentioned planning scheme amendment for the purpose of:

- Amending the Scheme Maps as follows:
 - Re zoning a portion of Lot 254 Ganesha Street, Horrocks from "Commercial" zone to "Residential R30" zone;
 - Re zoning a portion of Lot 1 Hoon Way, Horrocks from "Rural" zone to "Residential R30" zone;
 - Re zoning Lots 20, 21 and 47 Mitchell Street, Horrocks from "Local Scheme Reserve – Public Open Space" zone to "Residential R15";
 - Modifying a portion of Lot 10 Clance Street, Horrocks from "Additional Use 3" (A3) to "Additional Use 4" (A4);
 - Re zoning Lots 21 and 22 Mary Street, Northampton from "Special Use 2 to Public Purpose – Emergency Services";
 - Re zoning Lots 505 and 19 North West Coastal Highway Alms, from "Special Use" zone to "Public – Additional Use 2" (A2) zone; and
 - Remove the SOA3 Public Drinking Water Source Protection over Yelina Springs, Northampton and Port Gregory.

Plans and documents setting out and explaining the scheme amendment have been prepared at the Shire of Northampton Council Offices, Hampshire Road, Northampton and the Albert Centre, Gray Street, Kalbarri and will be open for inspection during office hours up to and including Friday 7th April 2023. Details are also available via the Northampton website www.northampton.wa.gov.au

Submissions on the planning scheme amendment may be lodged in writing and should include the amendment number, the property affected and details of the submission and lodged with the undersigned on or before 4.00pm Friday 7th April 2023.

SAUL KEENE BATTILAMA
 ACTING CHIEF EXECUTIVE OFFICER
 POLICIES, NORTHAMPTON WA 6503




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2.33 Activity Update Summary Consultation Information Sheet



SUMMARY

INFORMATION SHEET

February 2023

STYBARROW DECOMMISSIONING – SUMMARY INFORMATION SHEET

This is a summary of the activity in plain English. More detailed information is included in the Stybarrow Decommissioning Environment Plan (EP) Information Sheet.

Overview

Woodside is planning to decommission subsea equipment in the Stybarrow field, which has finished production. The decommissioning activities will be divided into the following parts, each with its own Environment Plan:

- Well plugging and abandonment
- Equipment removal
- Leaving certain equipment in place

When the Stybarrow field stopped production in 2015, the subsea equipment was flushed out with treated seawater as much as practical and the Stybarrow Venture facility departed. The Disconnectable Turret Mooring (DTM), which the facility attached to, later unintentionally lowered to the seabed.

This work will take place in Commonwealth waters, approximately 53 km North West of Exmouth in title area WA-32-L and at a water depth of between about 810m to 850m.

Woodside is planning to start the decommissioning activities upon the acceptance of each of the EPs summarised under the Work Method. The aim is to start work in around the second half of 2023.

A map showing the location of this work is below.

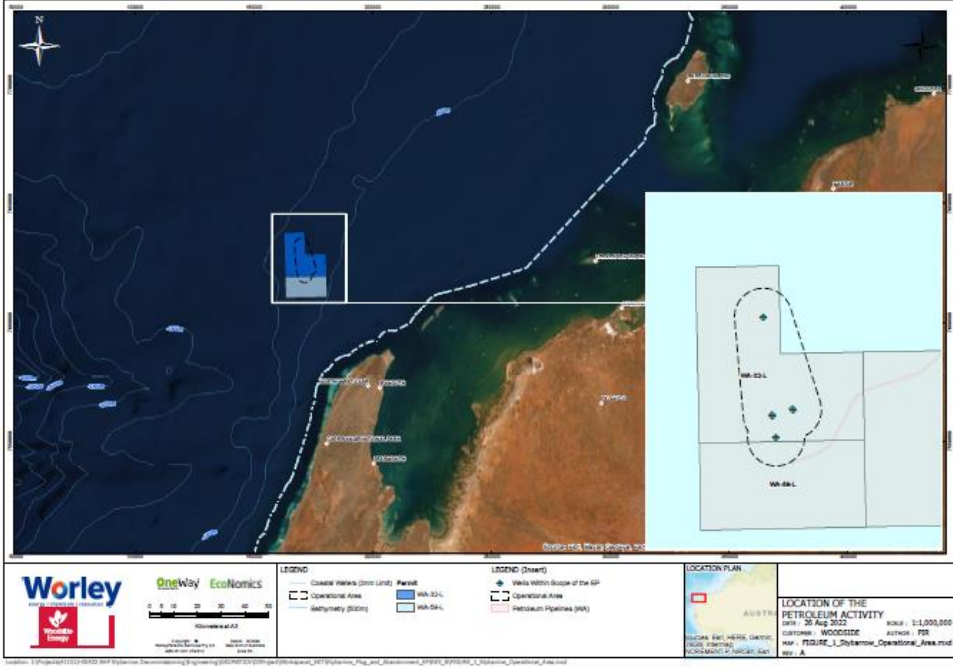


Figure 1. Stybarrow Location Map

1 Stybarrow Decommissioning – Summary Information Sheet | February 2023

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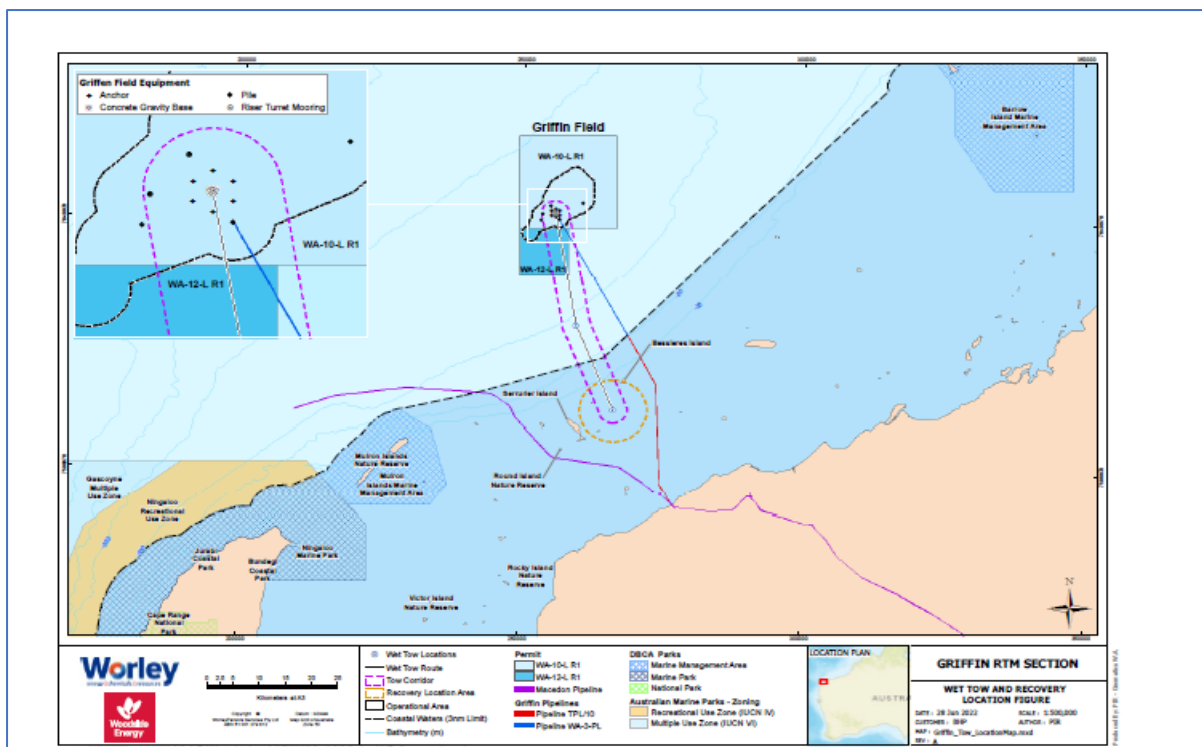


Figure 2. Griffin RTM Tow and Lift Area

Work Method

1. Well plugging and abandonment

Cement plugs will be installed in 10 wells to permanently prevent the risk of potential leaks. This will be done using a mobile drill rig. If it is practical to do so, a sealed flowline may also be unblocked, flushed and removed. The activity is expected to take up to about 9 months.

2. Equipment removal

Taking out subsea equipment, which was used to produce oil from the field, and the DTM which has lowered to the seabed. The plan is to lift the DTM from the water, however if this can't be done in the deep water location, it will be towed to shallower water. All other equipment on the seabed will be recovered in the Stybarrow field by a construction vessel. The activity is expected to take up to about 6 months.

3. Leaving certain equipment in place

Woodside is proposing to leave some equipment in place rather than removing it. This includes already buried anchors, piles and one wellhead which can't be removed. These items are made of steel and cement and are non-toxic, and not harmful to the environment.

Environmental Impacts and Management

This work program includes Planned Activities but may also result in Unplanned Activities. Both Planned and Unplanned Activities may impact the environment. Woodside manages the work program to reduce impacts and risks to as low as practical.

Planned Activities are activities that Woodside knows will happen as part of this work program. For example, Planned Activities include other marine users being temporarily stopped from accessing the work area, and disturbance to the seabed. Marine vessels used for the

work may generate underwater noise, light emissions, atmospheric emissions, and routine discharges (such as sewage, waste, and deck drainage), and other authorised waste. Some seawater with approved chemicals will be released from equipment being removed.

Unplanned Activities are not planned as part of the work program, but may be the result of an accident, incident, or emergency situation. It is highly unlikely that there will be an Unplanned Activity. Unplanned Activities might include a spill of fuel or oil from a vessel collision, a spill on the deck of a vessel (such as during refuelling), unplanned seabed disturbance, accidental collision with marine animals, waste entering the environment and accidental introduction of invasive species from outside the region. Management measures will be in place to reduce the probability and impacts of these unplanned activities to as low as practical.

A table showing all planned and unplanned activities, potential impacts, and management measures for each is included in the attached Information Sheet, **Table 3**.

The total area over which unplanned events could have environmental impacts is shown in the map below. This is referred to as the environment that may be affected (EMBA). The location in which the Stybarrow Decommissioning activities will occur, known as the Operational Area, is also shown on the map below. In the highly unlikely event such as a fuel spill from a vessel collision, the entire EMBA will not be affected. The part of the EMBA that is affected will only be known at the time of the event.



Figure 2. Environment that may be affected (EMBA) for the proposed activity.

Providing feedback

If you have an interest in the area of the “environment that may be affected” (EMBA) by this work program and would like more information or have any concerns, you can tell Woodside by calling **1800 442 977** or sending an email to **Feedback@woodside.com.au**. Please contact Woodside before **17th March 2023** so your questions or concerns can be considered during the environmental approval process.

If you would prefer to speak to the government directly, they can be contacted on **+61 (0)8 6188 8700** or send an email to **communications@nopsema.gov.au**.

Conclusion

Woodside produces energy that Western Australia, Australia, and the world needs. Woodside has made this energy from its oil and gas projects in Western Australia for over 35 years safely, reliably, and without any major environmental incident. Woodside is very proud of this legacy.

There are always potential risks with projects like this. Woodside has carefully planned this work program so that the risk of environmental impact is reduced to as low as reasonably practical and of an acceptable level. There are also strict government laws in place to protect the environment. Woodside complies with these laws and has systems in place to keep following these laws and rules for each project it undertakes.

If you would like information about Woodside’s work to study and care for the environment, you can find it at <https://www.woodside.com/sustainability/environment>.

Further Information

You can find the detailed Consultation Information Sheet for proposed activity on our website: <https://www.woodside.com/sustainability/consultation-activities>.

3. Follow up (March 2023)

3.1 Email sent to the DCCEEW and DAFF (10 March 2023)

Dear DCCEEW and DAFF

Woodside previously consulted you (see email below) on Woodside's proposed activities for the progressive decommissioning of the Griffin and Stybarrow fields.

We provided this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

We would appreciate any feedback you may have by **17 March 2023** to support the development of our proposed Environment Plans.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

For reference:

- The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.
- The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Consultation Information Sheets for the proposed activities are attached, which provide a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Regards
Woodside Feedback

3.2 Email sent to the MUA (10 March 2023)

Dear [REDACTED]

Woodside previously consulted you (see email below) on Woodside's proposed activities for the progressive decommissioning of the Griffin and Stybarrow fields.

We provided this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

We would appreciate any feedback you may have by **17 March 2023** to support the development of our proposed Environment Plans.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

For reference:

- The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

Stybarrow End State Decommissioning Environment Plan

- The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Consultation Information Sheets for the proposed activities are attached, which provide a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Regards
Woodside Feedback

3.3 Email sent to Western Australian Marine Science Institution (WAMSI) (10 March 2023)

Dear [REDACTED]

Woodside previously consulted you (see email below) on Woodside's proposed activities for the progressive decommissioning of the Griffin and Stybarrow fields.

We provided this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

We would appreciate any feedback you may have by **17 March 2023** to support the development of our proposed Environment Plans.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

For reference:

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- The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Consultation Information Sheets for the proposed activities are attached, which provide a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Regards

Woodside Feedback

3.4 Email sent to University of WA (UWA) (10 March 2023)

Dear [REDACTED]

Woodside previously consulted you (see email below) on Woodside's proposed activities for the progressive decommissioning of the Griffin and Stybarrow fields.

We provided this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

Stybarrow End State Decommissioning Environment Plan

We would appreciate any feedback you may have by **17 March 2023** to support the development of our proposed Environment Plans.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

For reference:

- The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.
- The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Consultation Information Sheets for the proposed activities are attached, which provide a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Regards

Woodside Feedback

3.5 Email sent to Protect Ningaloo (10 March 2023)

Dear Stakeholder

Woodside previously consulted you (see email below) on Woodside's proposed activities for the progressive decommissioning of the Griffin and Stybarrow fields.

We provided this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

We would appreciate any feedback you may have by **17 March 2023** to support the development of our proposed Environment Plans.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

For reference:

- The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.
- The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Consultation Information Sheets for the proposed activities are attached, which provide a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Regards

Woodside Feedback

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3.6 Email sent to the following persons or organisations (10 March 2023)

- *Australian Border Force (ABF)*
- *Department of Industry, Science and Resources (DISR)*
- *Department of Mines, Industry, Regulation and Safety (DMIRS)*
- *Australian Petroleum Production and Exploration Association (APPEA)*
- *Marine Tourism Association of Western Australia*
- *Pearl Producers Association (PPA)*
- *Recfishwest*
- *WA Game Fishing Association*

Dear Stakeholder

Woodside previously consulted you (see email below) on Woodside's proposed activities for the progressive decommissioning of the Griffin and Stybarrow fields.

We provided this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

We would appreciate any feedback you may have by **17 March 2023** to support the development of our proposed Environment Plans.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

For reference:

- The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.
- The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Consultation Information Sheets for the proposed activities are attached, which provide a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Regards

Woodside Feedback

3.7 Email sent to Conservation Council of WA (CCWA) (10 March 2023)

Dear Conservation Council of WA

Woodside previously consulted you (see email below) on Woodside's proposed activities for the progressive decommissioning of the Griffin and Stybarrow fields.

Stybarrow End State Decommissioning Environment Plan

We provided this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

We would appreciate any feedback you may have by **17 March 2023** to support the development of our proposed Environment Plans.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

For reference:

- The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.
- The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Consultation Information Sheets for the proposed activities are attached, which provide a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Regards

Woodside Feedback

3.8 Email sent to ACF (10 March 2023)

Dear Australian Conservation Foundation

Woodside previously consulted you (see email below) on Woodside's proposed activities for the progressive decommissioning of the Griffin and Stybarrow fields.

We provided this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

We would appreciate any feedback you may have by **17 March 2023** to support the development of our proposed Environment Plans.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

For reference:

- The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.
- The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Consultation Information Sheets for the proposed activities are attached, which provide a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Regards

Woodside Feedback

3.9 Email sent to WAFIC (10 March 2023)

Dear [REDACTED]

Woodside previously consulted you (see email below) on Woodside's proposed activities for the progressive decommissioning of the Griffin and Stybarrow fields.

We provided this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

We would appreciate any feedback you may have by **17 March 2023** to support the development of our proposed Environment Plans.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

For reference:

- The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.
- The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Consultation Information Sheets for the proposed activities are attached, which provide a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Regards

Woodside Feedback

3.10 Email sent to CFA (10 March 2023)

Dear [REDACTED]

Woodside previously consulted you (see email below) on Woodside's proposed activities for the progressive decommissioning of the Griffin and Stybarrow fields.

We provided this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

We would appreciate any feedback you may have by **17 March 2023** to support the development of our proposed Environment Plans.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

Stybarrow End State Decommissioning Environment Plan

For reference:

- The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.
- The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Consultation Information Sheets for the proposed activities are attached, which provide a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Regards

Woodside Feedback

3.11 Email sent to Tuna Australia (10 March 2023)

Dear [REDACTED]

Woodside previously consulted you (see email below) on Woodside's proposed activities for the progressive decommissioning of the Griffin and Stybarrow fields.

We provided this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

We would appreciate any feedback you may have by **17 March 2023** to support the development of our proposed Environment Plans.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

For reference:

- The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.
- The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Consultation Information Sheets for the proposed activities are attached, which provide a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Regards

Woodside Feedback

3.12 Email sent to AFMA (10 March 2023)

Dear AFMA

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Stybarrow End State Decommissioning Environment Plan

Woodside previously consulted you (see email below) on Woodside's proposed activities for the progressive decommissioning of the Griffin and Stybarrow fields.

We provided this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

We would appreciate any feedback you may have by **17 March 2023** to support the development of our proposed Environment Plans.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

For reference:

- The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.
- The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Consultation Information Sheets for the proposed activities are attached, which provide a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Regards

Woodside Feedback

3.13 Email sent to DPIRD (10 March 2023)

Dear [REDACTED]

Woodside previously consulted you (see email below) on Woodside's proposed activities for the progressive decommissioning of the Griffin and Stybarrow fields.

We provided this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

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For reference:

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- The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Stybarrow End State Decommissioning Environment Plan

Consultation Information Sheets for the proposed activities are attached, which provide a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Regards

Woodside Feedback

3.14 Email sent to Director of National Parks (10 March 2023)

Dear DNP

Woodside previously consulted you (see email below) on Woodside's proposed activities for the progressive decommissioning of the Griffin and Stybarrow fields.

We provided this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

We would appreciate any feedback you may have by **17 March 2023** to support the development of our proposed Environment Plans.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

For reference:

- The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.
- The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Consultation Information Sheets for the proposed activities are attached, which provide a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Regards

3.15 Email sent to DBCA (10 March 2023)

Dear DBCA

Woodside previously consulted you (see email below) on Woodside's proposed activities for the progressive decommissioning of the Griffin and Stybarrow fields.

We provided this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

We would appreciate any feedback you may have by **17 March 2023** to support the development of our proposed Environment Plans.

Stybarrow End State Decommissioning Environment Plan

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

For reference:

- The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.
- The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Consultation Information Sheets for the proposed activities are attached, which provide a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Regards

Woodside Feedback

3.16 Email sent to AIMS (10 March 2023)

Dear [REDACTED]

Woodside previously consulted you (see email below) on Woodside's proposed activities for the progressive decommissioning of the Griffin and Stybarrow fields.

We provided this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

We would appreciate any feedback you may have by **17 March 2023** to support the development of our proposed Environment Plans.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

For reference:

- The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.
- The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Consultation Information Sheets for the proposed activities are attached, which provide a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Regards

Woodside Feedback

3.17 Email sent to Exmouth Community Liaison Group (10 March 2023)

Dear Exmouth Community Liaison Group

Woodside previously consulted you (see email below) on Woodside's proposed activities for the progressive decommissioning of the Griffin and Stybarrow fields.

We provided this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

We would appreciate any feedback you may have by **17 March 2023** to support the development of our proposed Environment Plans.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

For reference:

- The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.
- The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Consultation Information Sheets for the proposed activities are attached, which provide a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Regards

██████████
████████████████████

3.18 Email sent to the Cape Conservation Group (10 March 2023)

Dear ██████████

Woodside previously consulted you (see email below) on Woodside's proposed activities for the progressive decommissioning of the Griffin and Stybarrow fields.

We provided this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

We would appreciate any feedback you may have by **17 March 2023** to support the development of our proposed Environment Plans.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

For reference:

Stybarrow End State Decommissioning Environment Plan

- The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.
- The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Consultation Information Sheets for the proposed activities are attached, which provide a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Regards

3.19 Email sent to AHO and AMSA – Marine Safety (15 March 2023)

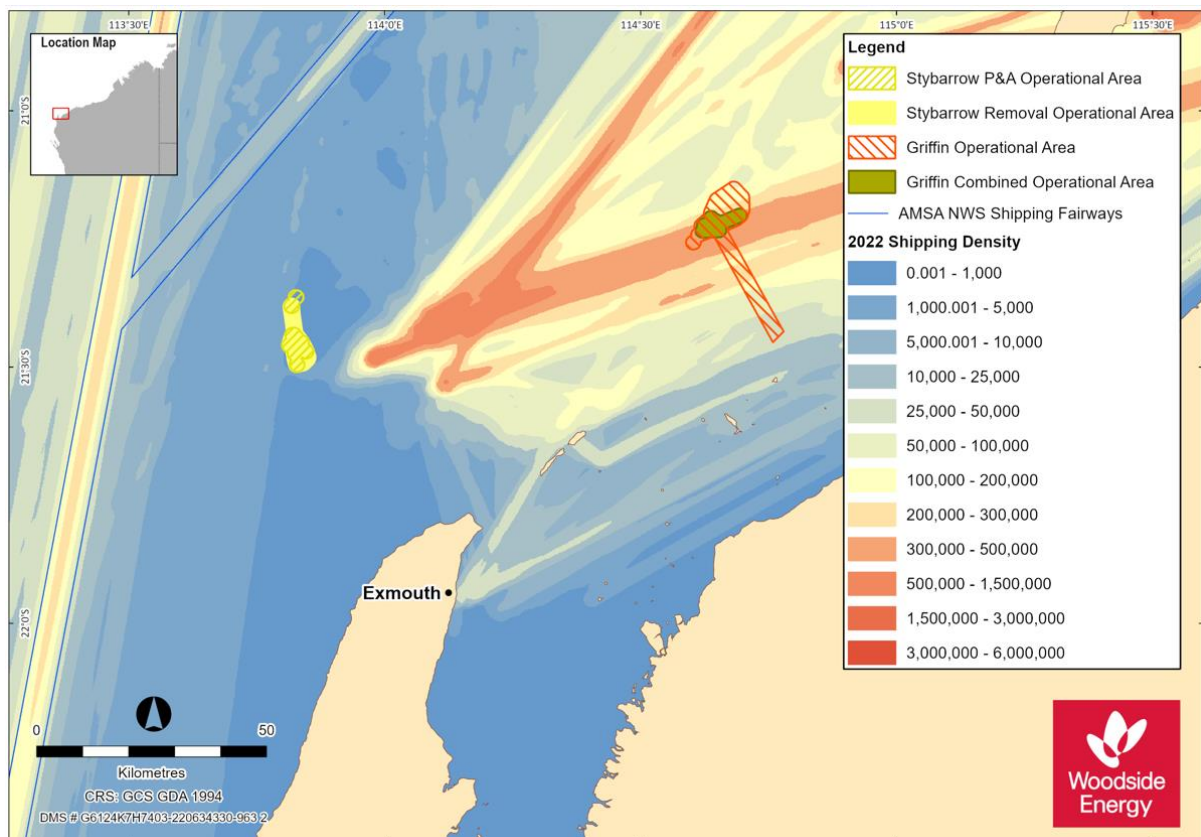
Dear AMSA and AHO

Woodside previously consulted you (email below) on its plans for the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

The Shipping Lane figures for the proposed activities Operational Areas are attached. Separate figures showing the Environment that May Be Affected (EMBA) for the proposed activities have also been attached for reference.

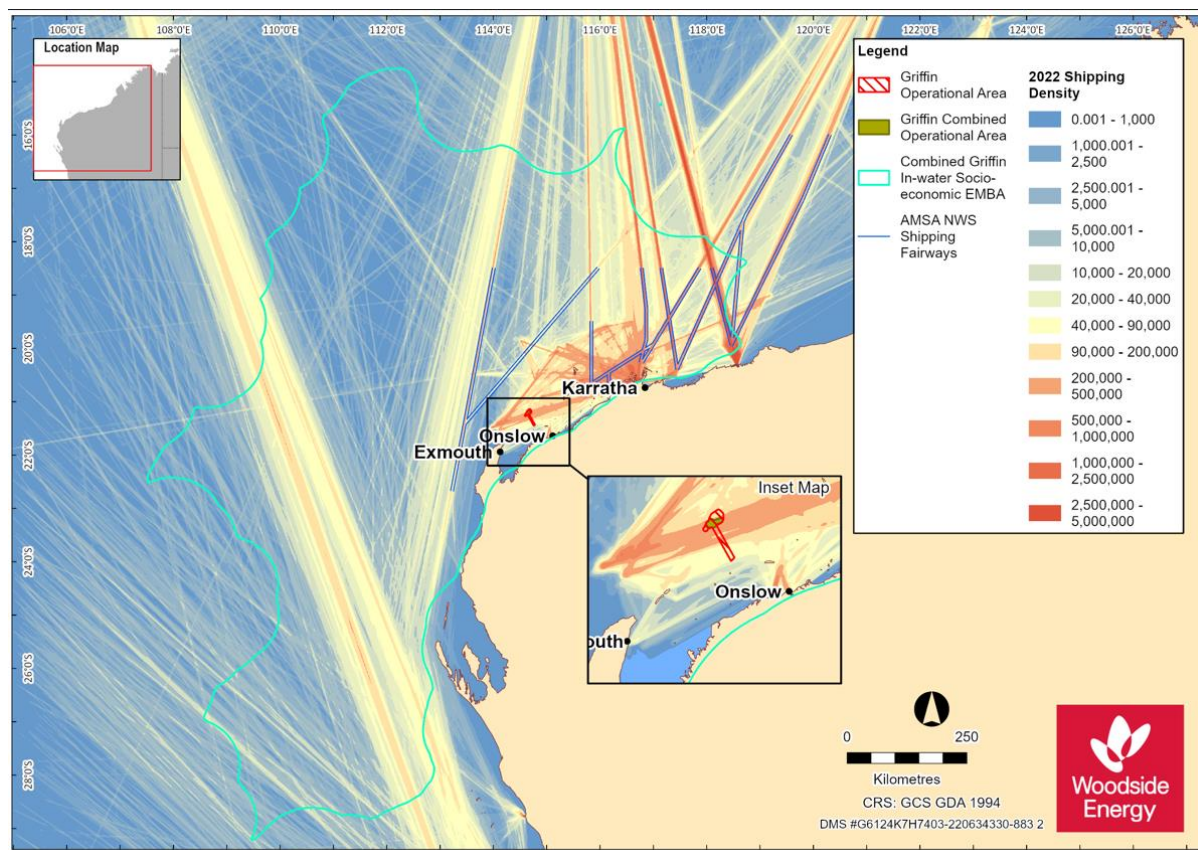
Please let us know should you have any feedback relating to the proposed activities by 17 March 2023.

Regards



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Stybarrow End State Decommissioning Environment Plan



3.20 Email sent to Department of Defence (8 March 2023)

Dear Department of Defence

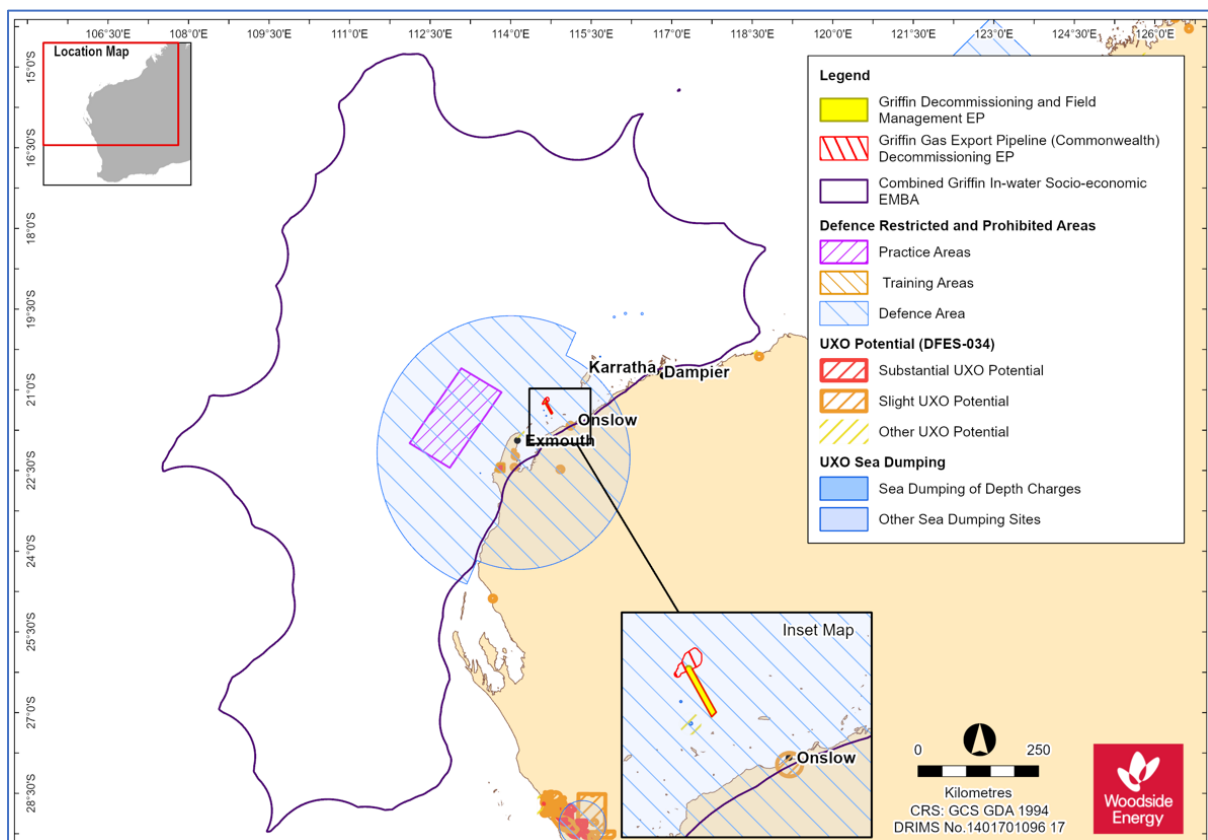
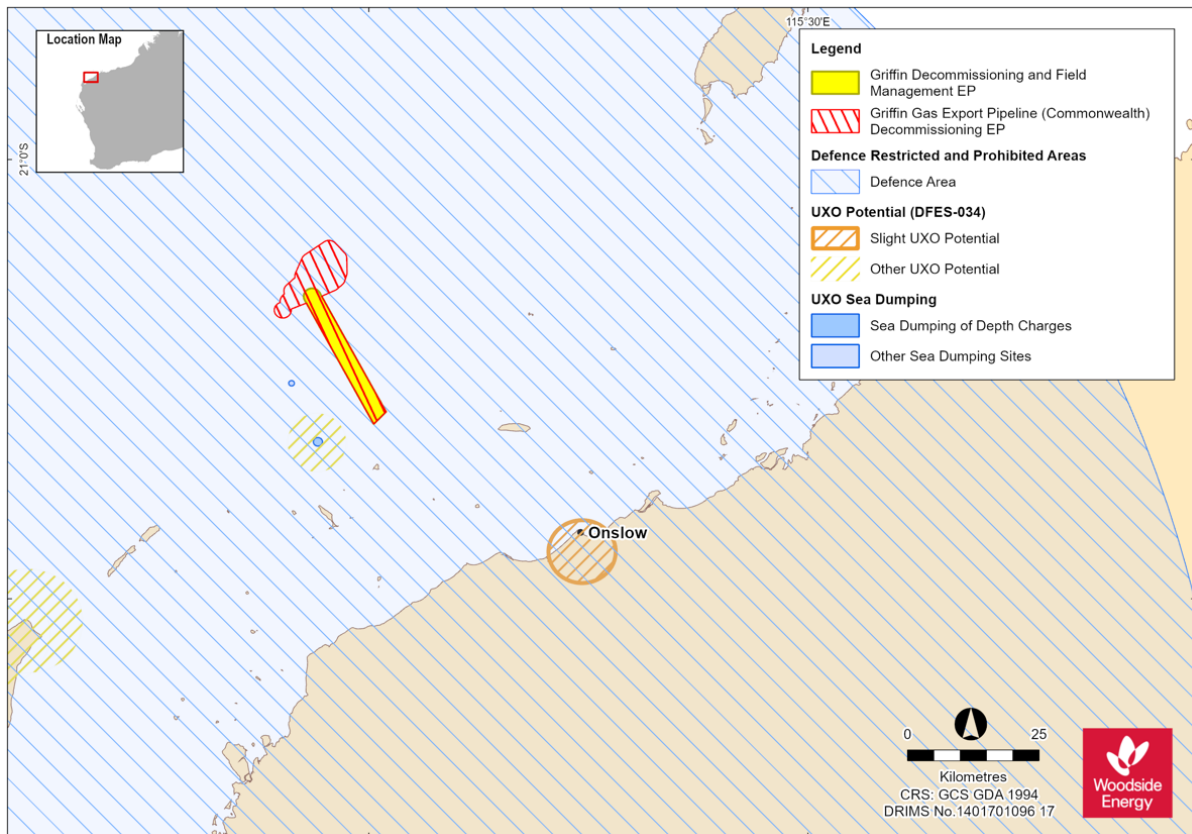
Woodside previously consulted you (email below) on its plans for the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

The Defence Area figures for the proposed Griffin and Stybarrow Operational Areas are attached. Separate figures showing the Environment that May Be Affected (EMBA) for the proposed activities are also attached for reference.

Please let us know should you have any feedback relating to the proposed activities by **17 March 2023**.

Regards

Stybarrow End State Decommissioning Environment Plan



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3.21 Email sent to CSIRO (4 June 2023)

Dear ■■■

Woodside previously consulted you (see email below) on Woodside's proposed activities for the progressive decommissioning of the Griffin and Stybarrow fields.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

For reference:

- The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.
- The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Consultation Information Sheets for the proposed activities are attached, which provide a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Should CSIRO have any feedback on the proposed activities, please let us know.

3.22 Email sent to Australian Southern Bluefin Tuna Industry Association (ASBTIA) (1 June 2023)

Dear Stakeholder

Woodside is providing this update on the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

We are providing this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

A summary of proposed activities is outlined below, and more detailed information is provided in the attached Consultation Information Sheets. The Information Sheets provide details on activities proposed to be managed under a number of environment plans (EPs) for each field, including a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting stakeholders whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

Stybarrow End State Decommissioning Environment Plan

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Any feedback provided previously on proposed activities will remain current where EPs are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

Please let us know if you would like to update previous feedback or have any additional views by **1 July 2023**.

Activity:

	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, distribution skids, risers, flexible flowlines, rigid flowlines, umbilicals, and the pipeline end module (PLEM)). Removal of the Riser Turret Mooring (RTM) and its moorings. Depending on the vessel utilised, recovery of the RTM may require sections of it to be towed to shallower water out of the title. Removal of an exploration wellhead (Ramillies-1 in neighbouring petroleum title WA-12-L). Ongoing field management activities. Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) within Commonwealth waters. <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposal to leave in situ 12 RTM drag anchors (buried), 6 concrete gravity bases and 5 piled foundations for the PLEM and 4 distribution skids. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Pre-execution activities associated with the well P&A, such as barrier testing and removal of marine growth. Well P&A of the 10 productions/injection wells by placing cement plugs in the wells to permanently prevent hydrocarbon release. Cutting and removal of the wellhead and subsea tree assembly. Unblocking of the H4 flowline, if deemed feasible. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, and umbilicals). Removal of the Disconnectable Turret Mooring (DTM) and its moorings. Recovery of the DTM may require it to be towed to shallower water outside of permit area WA-32-L to support the DTM removal from the marine environment. Ongoing field management activities (equipment monitoring and inspection). <p>In Situ Activities</p> <ul style="list-style-type: none"> Proposed leave in situ of the 9 DTM drag anchors (buried), nine suction piles for the riser holdbacks and the historical

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		exploration wellhead, Eskdale-1, which was unable to be removed following its drilling and abandonment in 2003.
Location:	<ul style="list-style-type: none"> 94 km northeast of Exmouth, Western Australia. 	<ul style="list-style-type: none"> 53 km northwest of Exmouth, Western Australia.
Approx. Water Depth (m):	<ul style="list-style-type: none"> Approx. 120 m. 	<ul style="list-style-type: none"> Approx. 810 – 850 m.
Schedule:	<p>Removal Activities</p> <ul style="list-style-type: none"> Earliest proposed removal activity start is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> Earliest P&A start is estimated to be Q4 2023, subject to approvals, MODU and vessel availability and weather constraints. P&A activities must be completed no later than 30 September 2024, pursuant to General Direction 833. <p>Removal Activities</p> <ul style="list-style-type: none"> Earliest facilities and DTM removal is estimated to be Q4 2023, subject to approvals, vessel availability and weather constraints. Equipment removal must be completed no later than 31 March 2025, pursuant to General Direction 833.
Duration:	<p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete. 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> P&A activities are anticipated to take approximately 6 – 9 months. <p>Removal Activities</p> <ul style="list-style-type: none"> Removal activities are anticipated to take approximately 4-6 months to complete and DTM removal activities are anticipated to take approximately 1 month to complete.
Exclusionary/Cautionary Zone:	<p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the equipment. A temporary 500 m exclusion zone will apply around the project vessels 	<p>P&A Activities</p> <ul style="list-style-type: none"> The Operational Area includes the area encompassing an approximate 3,000 m radius around each of the four drill centres within WA-32-L. A temporary 500 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.

	during removal and potential tow activities.	<p>Removal Activities</p> <ul style="list-style-type: none"> The temporary Operational Area includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads. The DTM has an existing 1200 m radius petroleum safety zone which will continue to be in place until it is removed. A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities. A temporary 500 m exclusion zone will apply around the HLV and the associated project vessels during the removal of the DTM.
Vessels:	<p>Removal Activities</p> <ul style="list-style-type: none"> Construction support vessel (CSV) and Heavy Lift Vessel (HLV) for recovery and pipeline removal activities. An anchor handling tug (AHT) to support the towing of the RTM to sheltered water. 	<p>P&A activities</p> <ul style="list-style-type: none"> Semi-Submersible Mobile Offshore Drilling Unit (MODU) The MODU will be supported by 2 to 3 offshore support vessels. <p>Removal Activities</p> <ul style="list-style-type: none"> CSV and HLV for recovery and activities. AHTs to support the towing of the DTM to the shallower water location (if required).

If you have any feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 by **1 July 2023**.

Your feedback and our response will be included in our Environment Plan which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

Regards,

3.23 Email sent to Shire of Exmouth (10 March 2023)

Dear [REDACTED]

Stybarrow End State Decommissioning Environment Plan

Woodside previously consulted you (see email below) on Woodside's proposed activities for the progressive decommissioning of the Griffin and Stybarrow fields.

We provided this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

We would appreciate any feedback you may have by **17 March 2023** to support the development of our proposed Environment Plans.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

For reference:

- The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.
- The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Consultation Information Sheets for the proposed activities are attached, which provide a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Regards

■

3.24 Email sent to Ningaloo Coast World Heritage Advisory Committee (NCWHAC) (10 March 2023)

Dear Ningaloo Coast World Heritage Area Advisory Committee

Woodside previously consulted you (see email below) on Woodside's proposed activities for the progressive decommissioning of the Griffin and Stybarrow fields.

We provided this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

We would appreciate any feedback you may have by **17 March 2023** to support the development of our proposed Environment Plans.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

For reference:

- The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.
- The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Stybarrow End State Decommissioning Environment Plan

Consultation Information Sheets for the proposed activities are attached, which provide a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Regards

3.25 Email sent to Exmouth recreational marine users (10 March 2023)

Dear Charter / Tourism Operator

Woodside previously consulted you (see email below) on Woodside's proposed activities for the progressive decommissioning of the Griffin and Stybarrow fields.

We provided this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

We would appreciate any feedback you may have by 17 March 2023 to support the development of our proposed Environment Plans.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

For reference:

- The Griffin Field is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.
- The Stybarrow Field is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Consultation Information Sheets for the proposed activities are attached, which provide a summary of potential key risks and associated management measures. The Information Sheets are also available on our website.

Regards

Woodside Feedback

3.26 Email sent to Western Deepwater Trawl Fishery (10 March 2023)

Dear Titleholder

Woodside previously consulted you (see email below) on Woodside's proposed activities for the progressive decommissioning of the Griffin and Stybarrow fields.

We provided this information to ensure relevant persons are informed about the status of proposed activities, as there have been changes to activity scope and supporting consultation information since consultation commenced for these decommissioning projects in 2021.

We would appreciate any feedback you may have by **17 March 2023** to support the development of our proposed Environment Plans.

Any feedback provided previously on proposed activities will remain current where Environment Plans are under assessment by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

Stybarrow End State Decommissioning Environment Plan

For reference:

- The **Griffin Field** is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.
- The **Stybarrow Field** is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

Consultation Information Sheets for the proposed activities are attached, which provide a summary of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

Regards

3.27 Email sent to Greenpeace Australia Pacific (23 June 2023)

Dear [REDACTED]

Woodside previously consulted Greenpeace Australia Pacific (GAP) (email below) on its plans to decommission the Stybarrow field under the following environment plans (EPs) on 14 February 2023 via Woodside's consultation activities website subscription:

- Stybarrow Plug and Abandonment (P&A) EP
- Stybarrow Decommissioning and Field Management EP
- Stybarrow Field Deviation EP

The Consultation Information Sheet for the proposed activities is attached, which includes a summary of potential key risks and associated management measures. The information sheet is also available on our website.

Please let us know if you would like to provide feedback with respect to the above proposed EPs.

Regards,

Woodside Feedback

3.28 Email sent to Australian Southern Bluefin Industry Association (23 June 2023)

Dear Stakeholder,

Woodside previously consulted you (email below) on its plans to decommission the Griffin and Stybarrow fields.

The Griffin Field is in Commonwealth waters in Petroleum Licence WA-10-L, 65 km northwest of Onslow and 94 km northeast of Exmouth, Western Australia and in water depths of approximately 120 m.

The Stybarrow Field is in Commonwealth waters in Petroleum Licence WA-32-L, approximately 53 km northwest of Exmouth, Western Australia and in water depths of approximately 810 – 850 m.

A summary of proposed activities is outlined below, and more detailed information is provided in the attached Consultation Information Sheets. The Information Sheets provide details on activities proposed to be managed under a number of environment plans (EPs) for each field, including a summary of potential key risks and associated management measures. The Information Sheets are also available on our website.

Please let us know if you would like to update previous feedback or have any additional views by 1 July 2023.

Kind regards,

Woodside Feedback

3.29 Geotargeted social media campaign

A Facebook information campaign was targeted along the coastline from Geraldton to Derby to ensure it reached all communities adjacent to the EMBA. Geotargeting locations are distributed along the coast, with 80 km radiuses around towns, cities and shires. Geotargeting points were also included for spaces between towns, cities and shires to ensure no areas were missed – you'll see below there are latitude and longitude references for those locations.

As at Wednesday, 11 January 2024

Ad reach: 131,507 users

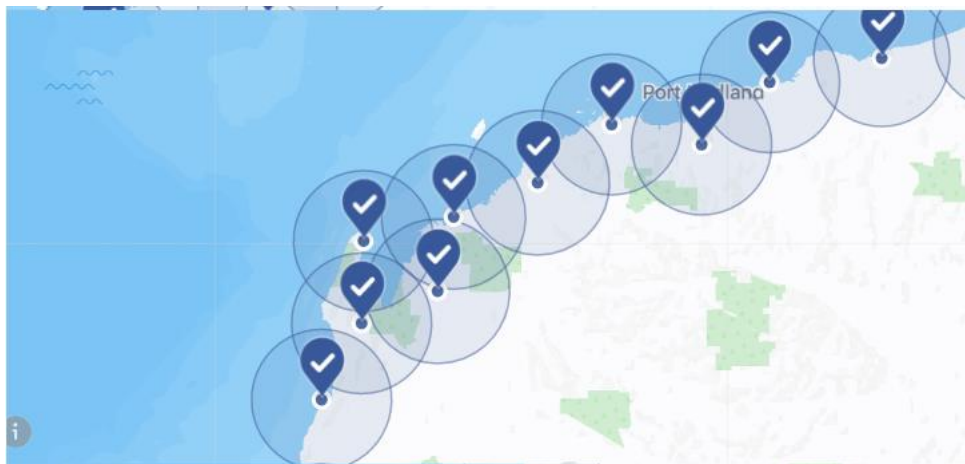
Impressions: 1,352,808 views

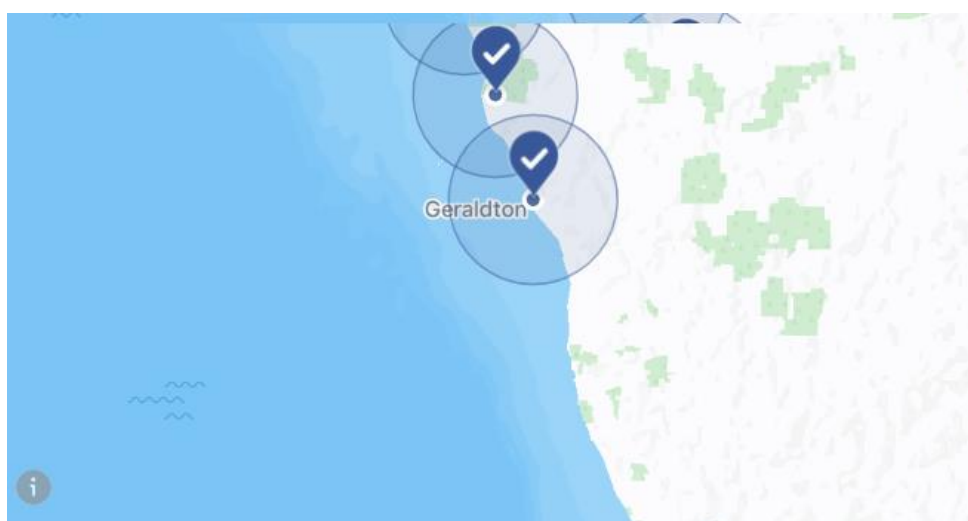
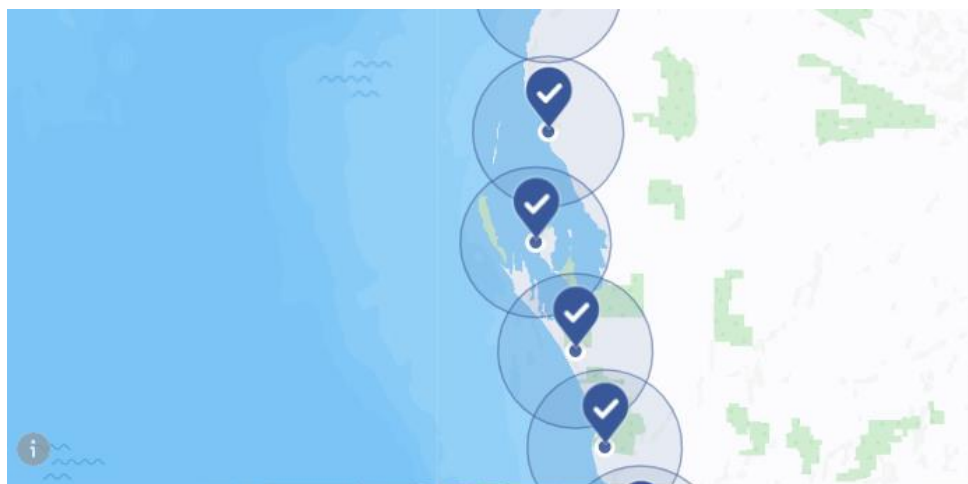
Clicks through to Consultation Information page: 5,990 link clicks

Geotargeting locations:

- Broome (+80 km)
- Carnarvon (+80 km)
- Denham (+80 km)
- Exmouth (+80 km)
- Geraldton (+80 km)
- Onslow (+80 km)
- Port Hedland (+80 km)
- Karratha (+80 km)
- Latitude -17 Longitude 122.65 Dampier Peninsula (+80 km)
- Latitude -22.75 Longitude 114.10 Exmouth Gulf (+80 km)
- Latitude -18.96 Longitude 121.94 Gingerah (+80 km)
- Latitude -27.85 Longitude 114.25 Kalbarri National Park (+80 km)
- Latitude -21.32 Longitude 116.03 Mardie (+80 km)
- Pardoo (+80 km)
- Latitude -20.94 Longitude 117.83 Sherlock (+80 km)
- Latitude -26.96 Longitude 113.95 Tamala (+80 km)
- Latitude -19.88 Longitude 121.15 Telfer (+80 km)
- Latitude -17.52 Longitude 123.56 Willare (+80 km)
- Latitude -22.43 Longitude 114.93 Yannarie (+80 km)







3.30 Exmouth Community Information Session geotargeted social media campaign

A Facebook information campaign was targeted in Exmouth to ensure it reached communities where the Consultation Information Session was planned to be held. Geotargeting points were also included for spaces between towns, cities and shires to ensure no areas were missed – you’ll see below there are latitude and longitude references for those locations.

Dates: 15 June 2023 – 17 June 2023

Platform: Facebook

Ad type/placement: Feed tile and story

Reach: 6,801

Impressions: 8,237

Geotargeting (see below)

- 80km radius around Exmouth
- 80km radius around Coral Bay


Stybarrow End State Decommissioning Environment Plan

Reach people living in or recently in this location. ⓘ

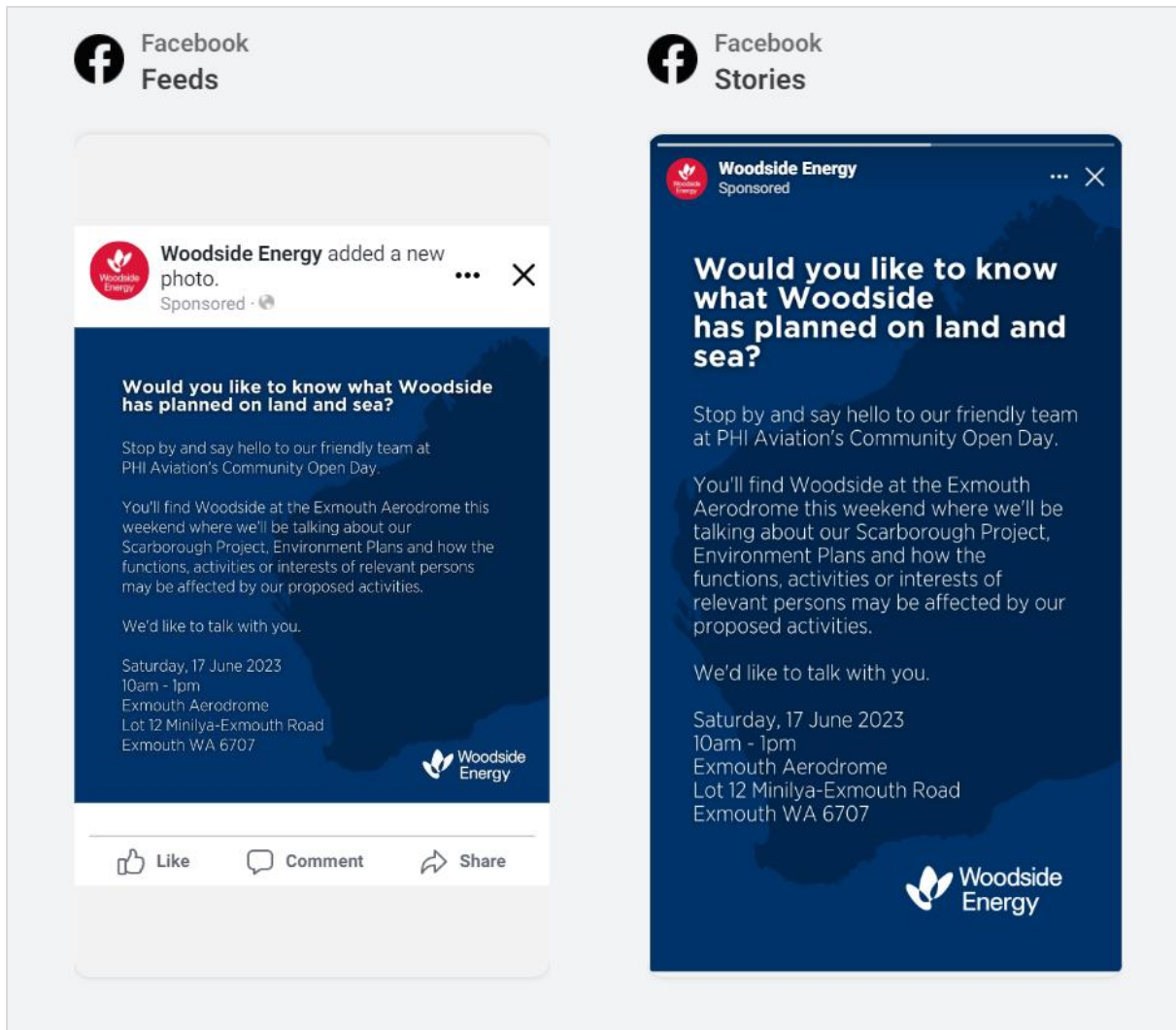
Australia

- ✓ Coral Bay, Western Australia City + 80 km ▼
- ✓ Exmouth, Western Australia City + 80 km ▼

✓ Include ▼ 🔍 Search locations Browse



The map displays the Western Australian coastline with two blue location pins. One pin is at Coral Bay and the other is at Exmouth. Each pin has a white circle around it, and a larger, semi-transparent light blue circle represents an 80 km radius. The map includes standard navigation controls on the right side: a home button (up arrow), zoom in (+), zoom out (-), location services (location icon), and a 'Drop Pin' button. A small information icon (i) is visible in the bottom left corner of the map area.



3.31 Roebourne Community Information Session poster (22 June and 19 July 2023)


On 22 June 2023, Woodside held a consultation information session at its Roebourne office. The consultation information session was hosted by members from Woodside's Corporate Affairs and Environment teams and was open for all community members to receive information regarding Woodside's Environment Plans and proposed and planned activities.

Woodside distributed posters advertising the community information session locally, including:

- Front door and front window of Woodside Roebourne office
- Online distribution via the Roebourne Community Calendar
- Roebourne Police Station provided with printed copy

Woodside staff also visited the following offices to advise of the community information session:

- Ngarluma and Yindjibarndi Foundation Ltd (NYFL)
- Ngarliyarndu Bindirri Aboriginal Corporation
- Yinjaai-Barni Art
- Foundation Foods



COMMUNITY CONSULTATION


COMMUNITY INFORMATION SESSIONS IN IERAMUGADU

You're invited to meet, greet and eat with our friendly team in Ieramugadu. We'd like to talk about our Environment Plans with relevant persons whose functions, activities or interests may be affected by our proposed projects.

Stop by to find out more and share your feedback about Woodside's work in the North West, our Environment Plans and our current and proposed projects, including Scarborough and Browse.

Visit 39 Roe Street, Roebourne, between **12pm** and **3.30pm**, on:

Thursday	Wednesday
22 June 2023	19 July 2023



Posters for Community Information Session, Roebourne (19 July 2023)

On 19 July 2023, Woodside held a Consultation Information Session at its Roebourne office. The session was hosted by members from Woodside's Corporate Affairs and Environment teams and was open for all community members to receive information regarding Woodside's EPs and proposed and planned activities.

Woodside distributed posters advertising the session locally, including:

- Front door and front window of Woodside Roebourne office, with the open sign and fact sheets on display inside

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Stybarrow End State Decommissioning Environment Plan

- On the noticeboard at Roebourne Community Resource Centre (inside the Leramugadu Store (NYFL's Foundation Foods).
- Roebourne CRC
- Pilbara Community Legal Service
- NBAC
- WAPOL
- BP.

Woodside staff also visited the following offices to advise of the community information session and provide posters:

- Ngarluma and Yindjibarndi Foundation Ltd (NYFL)
- Yinjaai-Barni Art Group
- Yandi for Change
- NYFL
- WY Program
- Roebourne Library
- Yindjibarndi Ranger office
- Ashburton Aboriginal Corporation
- A poster was also put up at Cossack.


The posters were physically posted up on community boards in Roebourne on 14 July 2023 at:

- Roebourne CRC
- Pilbara Community Legal Service
- NBAC
- WAPOL
- BP
- Cossack.

Posters were delivered to:

- Yinjaai-Barni Art Group
- Yandi for Change
- NYFL
- WY Program
- Roebourne Library
- Yindjibarndi Ranger office

- Ashburton Aboriginal Corporation.



COMMUNITY CONSULTATION


COMMUNITY INFORMATION SESSIONS IN IERAMUGADU

You're invited to meet, greet and eat with our friendly team in Ieramugadu. We'd like to talk about our Environment Plans with relevant persons whose functions, activities or interests may be affected by our proposed projects.

Stop by to find out more and share your feedback about Woodside's work in the North West, our Environment Plans and our current and proposed projects, including Scarborough and Browse.

Visit 39 Roe Street, Roebourne, between **12pm** and **3.30pm**, on:

Thursday	Wednesday
22 June 2023	19 July 2023



Stybarrow End State Decommissioning Environment Plan



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3.32 Karratha Community Information Session newspaper advertisement – Pilbara News (28 June 2023)

Pilbara NEWS
Wednesday, June 28, 2023

NEWS 7

Rio reaches \$1b Range milestone

CHEYANNE ENCISO

Rio Tinto has spent \$1 billion with WA businesses as it progresses the development of its Western Range joint venture with China Baowu Steel Group.

Simon Trott, iron ore chief executive of Rio Tinto, said the \$1b spend marked a considerable milestone.

"Rio Tinto spends billions of dollars with local suppliers across Western Australia and the Pilbara every year, helping support thriving communities across the State by providing local jobs for local people," he said.

The 25 million tonnes-a-year Western Range project will help sustain production of Rio's flagship Pilbara blend product from its existing Paraburadoo mining hub as the Eastern Range project depletes.

China Baowu said it was pleased to see the Western Range project progressing smoothly.

Premier Roger Cook said significant projects such as the Western Range reinforced WA as an attractive and secure destination for business and investment.

"I want to commend Rio Tinto and Baowu on this latest project milestone and acknowledge their efforts in investing in WA to ensure WA businesses and workers benefit most," he said.

Rio in March reported it had spent \$8.6b with more than 2900 WA and Indigenous businesses in 2022 as part of its local buying program.

The figure included \$618m with Pilbara-based businesses, \$594m with Indigenous companies across WA, and \$438m with businesses run by traditional owners.

Rio Tinto iron ore chief executive Simon Trott and China Baowu vice-president Hou Angui.

We are hiring

JOIN THE TEAM!

Here at Pilbara Ports Authority, we are committed to advancing an inclusive and productive workplace where people are valued and respected.

We are proud of the talent and diversity of our workforce. Our people are key to our current and future success. We are seeking individuals, who strive for excellence in all they do and seek out opportunities for growth. In return, we provide generous support for training and professional development.

If this sounds like a workplace you would thrive in, take a look at our current vacancies.

- **Administration Officer – Maintenance – Port Hedland**

Find out more about PPA careers and youth training online via careers.pilbaraports.com.au

PILBARA PORTS AUTHORITY

FIND OUT MORE ABOUT OUR PROPOSED ACTIVITIES

WOULD YOU LIKE TO KNOW WHAT WOODSIDE HAS PLANNED ON LAND AND SEA?

We'd like to talk about our Environment Plans with relevant persons whose functions, activities or interests may be affected by our proposed projects.

Drop in to our office to find out more and share your feedback about Woodside's work in the North West, our Environment Plans and our current and proposed activities, including Scarborough.

Thursday, 29 June 2023
Between 9.00am - 2.00pm
The Quarter HQ Level 3
24 Sharpe Avenue
Karratha WA 6714

You can also access our consultation information and provide feedback by scanning the QR code.

Woodside Energy

3.33 Karratha Community Information Session (28 June 2023) Facebook post

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Stybarrow End State Decommissioning Environment Plan

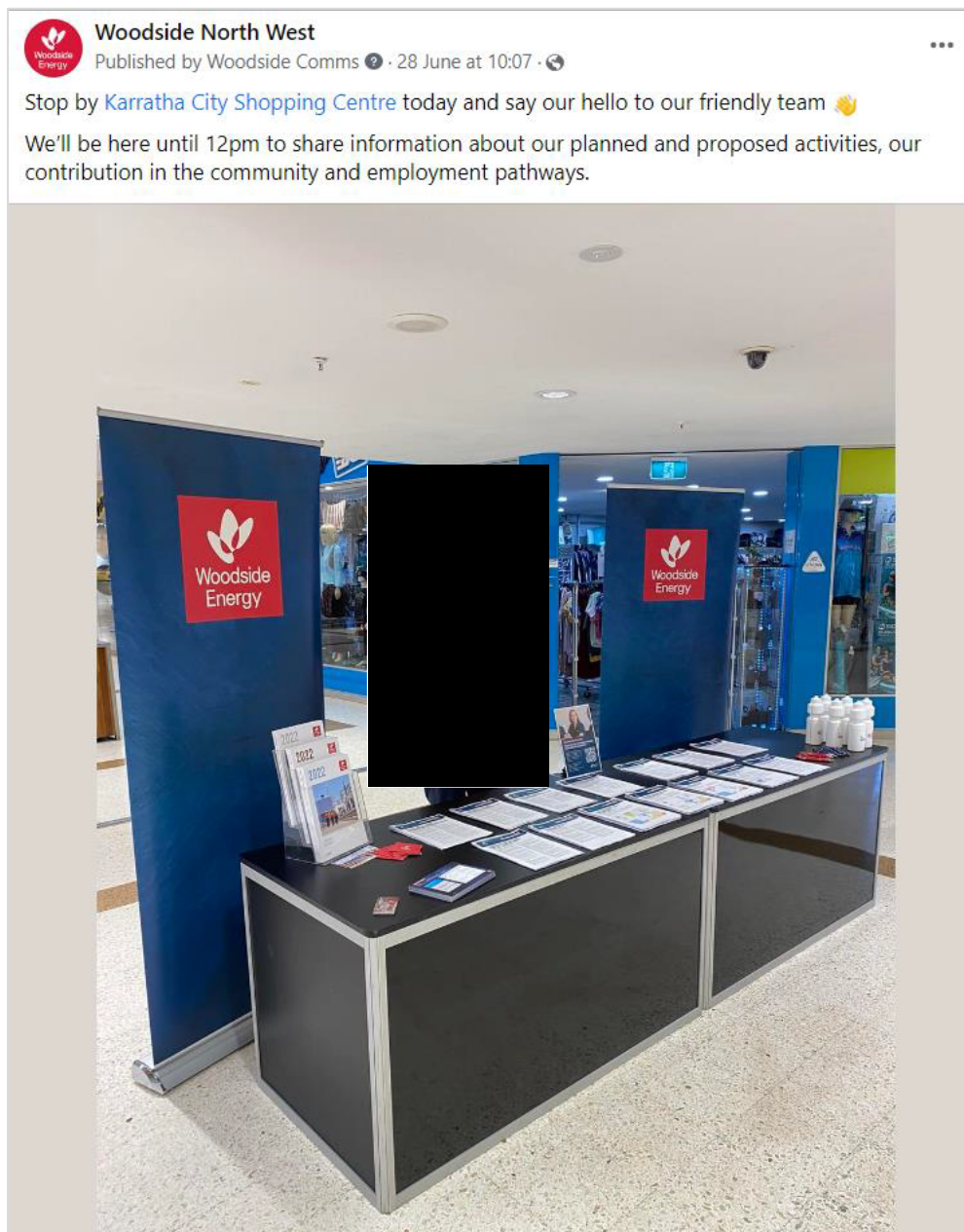
On 28 June 2023, Woodside posted a story on its Woodside North West Facebook account, sharing details of its shopping centre stand where Consultation Information Sheets regarding is planned and proposed activities were available, including the activities proposed under this EP.

Platform/channel: Woodside North West (Facebook)

Date: 28 June 2023

Reach: 1,464 viewers

Impressions: 1,464 views



3.34 Karratha Community Information Session (29 June 2023) geotargeted social media campaign

On 29 June 2023, Woodside held a drop-in session at its Karratha town office. The drop-in session was hosted by one of Woodside's Senior Environmental Advisers and was open for all community

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Stybarrow End State Decommissioning Environment Plan

members to receive information regarding Woodside’s Environment Plans and proposed and planned activities.

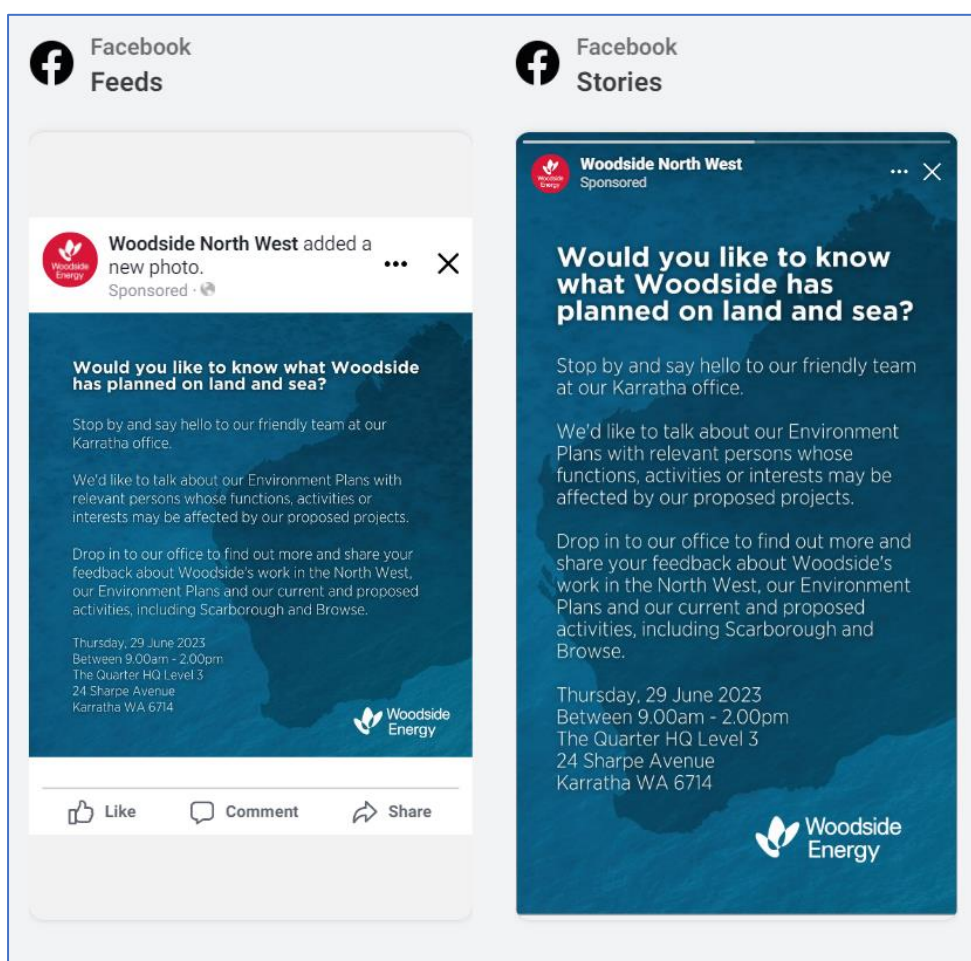
Dates: 26 June 2023 – 29 June 2023

Geotargeting: 40km radius around Karratha

Reach: 19,240 viewers

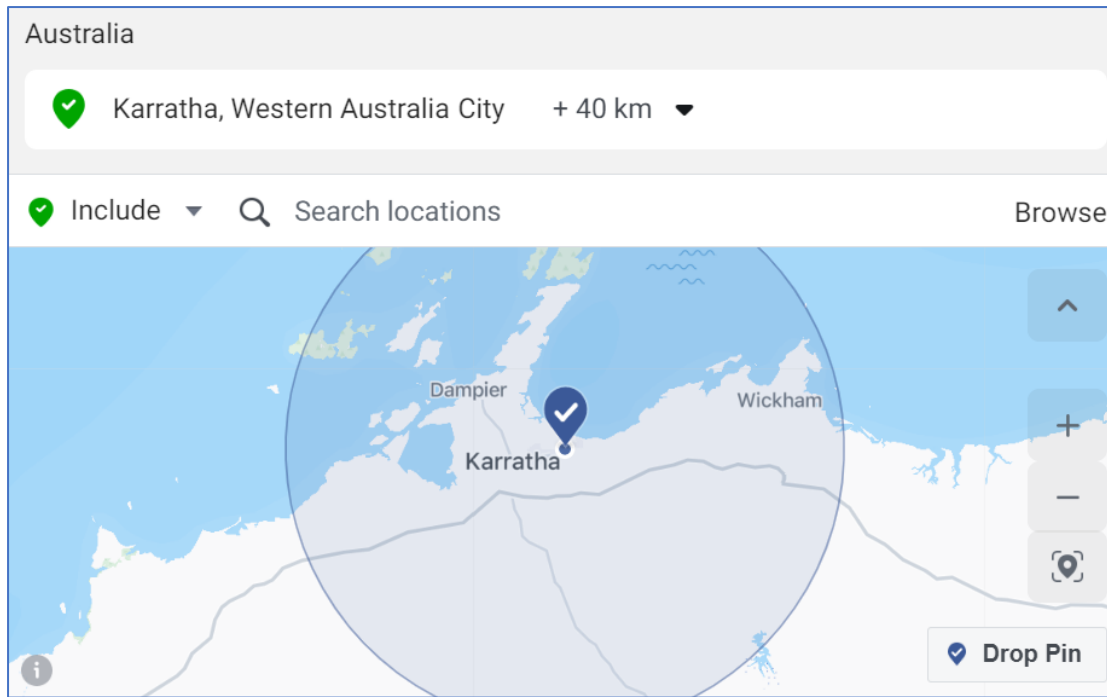
Impressions: 22,931 views

Campaign name	Ad set name	Delivery	Reach	Impressions	Frequency	Attribution setting	Results
EP Drop in session - KTA	All	Recently completed Campaign	19,240	22,931	1.19	7-day click or 1-day view	19,240 Reach

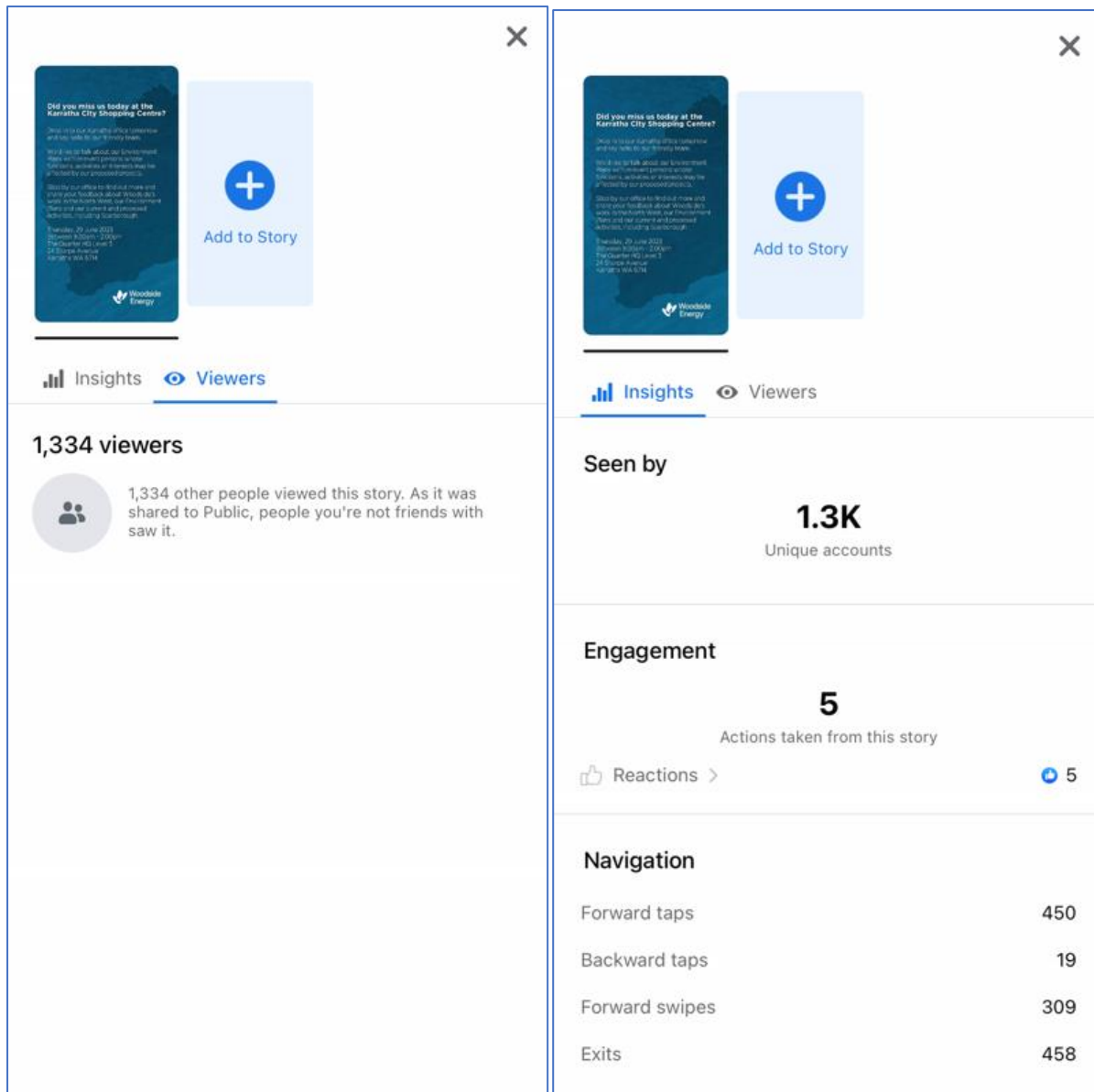


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Stybarrow End State Decommissioning Environment Plan



On 28 June 2023, Woodside posted a story on its Woodside North West Facebook account, sharing details of its drop-in session.
Reach: 1,366 viewers
Impressions: 22,931 views
Geotargeting: 40 km radius around Karratha





3.35 Line left intentionally blank

3.36 FeNaCING Festival (5 and 6 August)

Pilbara News Advertisement (2 August 2023)



PROVIDE YOUR FEEDBACK AT FeNaCING FESTIVAL

Are you interested in what Woodside has planned on land and sea?

Join our friendly team at FeNaCING Festival and find out more about our Environment Plans and projects, including Scarborough and Browse.

We look forward to sharing information about our current and proposed activities and providing the opportunity to discuss your relevant functions, activities or interests and receive your input.

Follow us @woodsidenorthwest
www.woodside.com



Melski's murals brought to life

DANIEL SPENCE

Tambrey Primary School has successfully brought renowned artist Mel Melski, popularly known as Melski, and her sister Tash to create three vibrant murals around the school premises.

With funding support from corporate entities like Woodside, FMG, and Pilbara Real Estate, as well as community contributions from Jetwave Marine, Santos, Yara, and QUBE Energy, the school raised more than \$20,000 to bring this art project to life.

Home to nearly 700 students, with a third of them having Indigenous backgrounds, school Deputy Principal Toni Whithread and visual arts specialist Felicity Collins said the mission of the project was to celebrate diversity and create a sense of belonging by reflecting students' culture through artwork.

The school's mission was to celebrate diversity and create a profound sense of belonging by reflecting the students' culture through artwork.

What particularly attracted the school to Mel's art-



The artist was brought to the school to create murals.

work was its unique paint-by-numbers style, which allowed students to actively participate in the mural creation process.

Eager to engage the entire school community, the school declared a special "paint week," during which more than 650 students enthusiastically joined hands to contribute to the murals.

Throughout the week, students not only participated in the creation of the murals but also enjoyed immersive art sessions in the park, indulging in painting, drawing, collaging, and chalk drawings under the enchanting winter weather.

The entire experience

served to nurture the students' creativity and appreciation for art, leaving a lasting impact on their artistic aspirations.

Ms Collins said she was thrilled to see the whole school coming together for a week of collaborative art.

"We were delighted to see students immersed in a week of collaborative art," she said. "Students not only contributed to the creation of the mural but also with their involvement in the immersive art in the park session — which included painting, drawing collaging and chalk drawings — while all outside soaking up the winter weather."



this is your chance to make a change

Chevron's Community Spirit Fund is offering up to **\$15,000** towards local projects.

Beyond supplying affordable, reliable, ever-cleaner energy — we believe we have an important role to play in helping local communities build a vibrant and prosperous future.

We do this by investing in programs which contribute to areas of health and wellbeing, education, environment and building thriving communities.

We're calling for applications for the Chevron Community Spirit Fund, offering donations of up to \$15,000 to not-for-profit organisations operating in the following Northwest locations:

- Carnarvon
- Coral Bay
- Dampier
- Denham
- Exmouth
- Karratha
- Onslow
- Port Hedland
- Roebourne
- Shark Bay

Applications are open now until 13 August 2023. To apply, head to australia.chevron.com



Story on the Woodside North West Facebook Page (2 August 2023)



Environment Plan Banner



3.37 Passion of the Pilbara social media (18 August 2023)

17 August 2023 – Passion of the Pilbara Facebook Post



17 August 2023 – Woodside North West Facebook Page




Woodside Facebook Post and Story – 17 August 2023

Feeds

Facebook Feeds

Woodside North West added a new photo. Sponsored



PROVIDE YOUR FEEDBACK AT PASSION OF THE PILBARA

Are you interested in what Woodside has planned on land and sea?

Join our friendly team at Passion of the Pilbara in Onslow this Saturday and find out more about our Environment Plans and projects, including Scarborough and Browse.

We look forward to sharing information about our current and proposed activities and providing the opportunity to discuss your relevant functions, activities or interests and receive your input.


Woodside Energy

Like Comment Share

Stories and Reels

Facebook Stories

Woodside North West Sponsored



PROVIDE YOUR FEEDBACK AT PASSION OF THE PILBARA

Are you interested in what Woodside has planned on land and sea?

Join our friendly team at Passion of the Pilbara in Onslow this Saturday and find out more about our Environment Plans and projects, including Scarborough and Browse.

We look forward to sharing information about our current and proposed activities and providing the opportunity to discuss your relevant functions, activities or interests and receive your input.

Woodside Energy

Audience definition

Your audience is defined.

Specific
Broad

Estimated audience size: 21,400 - 25,200 ⓘ

Estimates may vary significantly over time based on your targeting selections and available data.

Estimated daily results

Reach ⓘ

15K-21K

The accuracy of estimates is based on factors such as past campaign data, the budget you entered, market data, targeting criteria and ad placements. Numbers are provided to give you an idea of performance for your budget, but are only estimates and don't guarantee results.

3.38 Community Information Session – Karratha, Port Hedland and Roebourne (18 – 20 September 2023)

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Pilbara News Advertisement (13 September 2023)



City of Karratha Mayor Peter Long. Picture: Tom Zainmayr

Mayor runs again as candidates put forward pitches

DANIEL SPENCE

Nominations have closed for the 2023 Karratha mayoral and councillor elections, with the list of candidates running to be the city's next mayor being released.

Peter Long — who has been in the position since 2011 — will be running again and said, if re-elected, he would continue to provide Karratha with intelligent, safe and inclusive leadership.

"I am a full-time mayor, always able to receive you and your ideas," he said. "I love the Pilbara and our community."

Regional Development Australia Pilbara chief executive and former local government minister Tony Simpson is also running for mayor.

His vision is to join forces with State and Federal entities to progress childcare, health and housing solutions.

"I would work to draw major brand investments in retail and leisure to provide more options for residents. Identify land for a

foreshore entertainment hub and infuse Karratha with festivals and quality entertainment," he said.

Brenton Johannsen — who ran for the seat of Durack at the recent Federal election under One Nation — said he would donate the entire mayoral allowance to charity.

"I will be a committed full-time mayor, my goal is to visit all businesses and resident groups on a regular basis to touch base and discuss any new issues," he said.

Mr Johannsen said his aims would be neighbourhood safety, more opportunities for locals, ratepayer discounts for local facilities, moving airport smokers' areas, and eco-friendly weed management.

As a sitting councillor, radio announcer, parent and former local business owner mayoral candidate Pablo Miller said he had got to know the people of Karratha.

"As your mayor, I will continue to not only listen but be a strong advocate for our community," he

said. Mr Johannsen said he was interested in expanding opportunities for young people and families, growing local and cultural tourism, supporting businesses and bolstering mental health services.

The owner of the North West Brewing Co Daniel Scott has a vision as mayor to grow Karratha's economy.

His plan is to create an education and sporting precinct between the TAFE and St Luke's College, with accommodation for secondary and tertiary students.

His plans also include a new home for the Pilbara Universities Centre, and a sporting hub for rugby, soccer, hockey and gymnastics.

Those running for council include Daniel Scott, Kieran Dart, Wayne Mothershaw, Mr Johannsen, Sarah Roots, George Levisianos, Bradley Davey, Mr Simpson, James Corea, Joseph Almonte and Geoff Harris.

Elections will be held for the four vacancies on October 21st.

FIND OUT MORE ABOUT OUR PROPOSED ACTIVITIES

ARE YOU INTERESTED IN WHAT WOODSIDE HAS PLANNED ON LAND AND SEA?

We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed projects.

Speak to our friendly team members at one of our four sessions in September.

<p>Monday, 18 September 2023 Between 8.00am - 12.00pm Karratha Shopping Arts Centre Sharpe Avenue Karratha</p>	<p>Monday, 18 September 2023 Between 3.00pm - 6.00pm Red Earth Arts Precinct 27 Welcome Road Karratha</p>
<p>Tuesday, 19 September 2023 Between 10.00am - 5.00pm South Hedland Square 9-31 Throssell Road South Hedland</p>	<p>Wednesday, 20 September 2023 Between 10.00am - 4.00pm Woodside Office 39 Roe Street Roebourne</p>

You can access our consultation information, provide feedback and subscribe for updates by scanning the QR code.

ONSLOW

Business Excellence Awards

Cocktail Celebration

Saturday 16th September, 2023
at ONSLOW Beach Resort

A fabulous stand up cocktail event with canapes and drinks from 5:30pm
Award presentations from 7pm
Live entertainment
post award presentations

Tickets

Purchase your tickets online:
<https://OCCIBusinessAwards2023.eventbrite.com.au>

Social Media Tiles (6 - 16 September 2023)

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Are you interested in what Woodside has planned on land and sea?

Stop by and say hello to our friendly team in Karratha.

We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed projects.

Monday, 18 September 2023

Between 8.00am - 12.00pm
Karratha Shopping Centre
Sharpe Avenue
Karratha

Between 3.00pm - 6.00pm
Red Earth Arts Precinct
27 Welcome Road
Karratha



Are you interested in what Woodside has planned on land and sea?

Stop by and say hello to our friendly team in Port Hedland.

We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed projects.

Tuesday, 19 September 2023

Between 10.00am - 5.00pm
South Hedland Square
9-31 Throssell Road
South Hedland



Are you interested in what Woodside has planned on land and sea?

Stop by and say hello to our friendly team in Roebourne.

We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed projects.

Wednesday, 20 September 2023

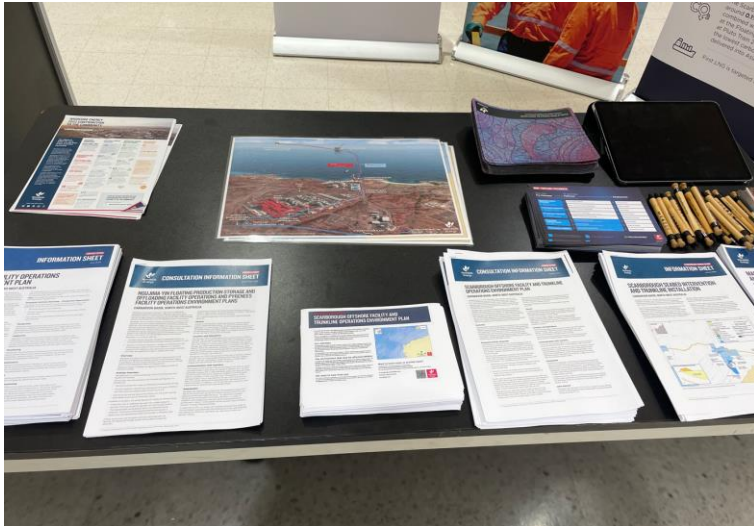
Between 10.00am - 4.00pm
Woodside Office, Roebourne
39 Roe Street
Roebourne



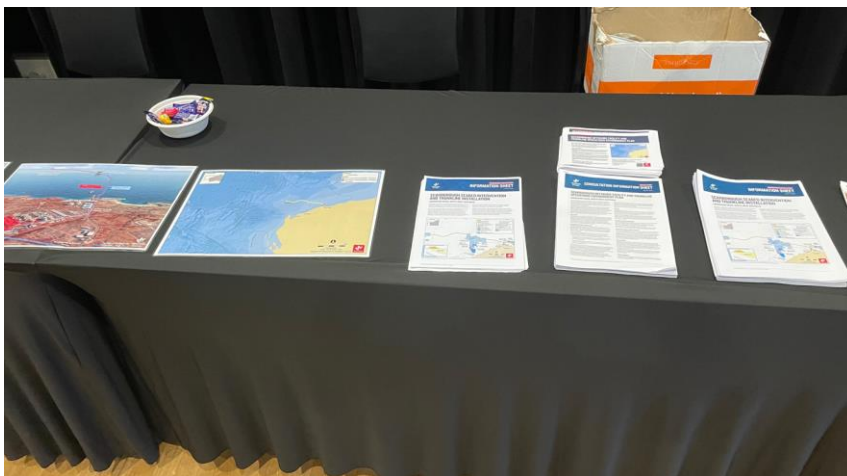
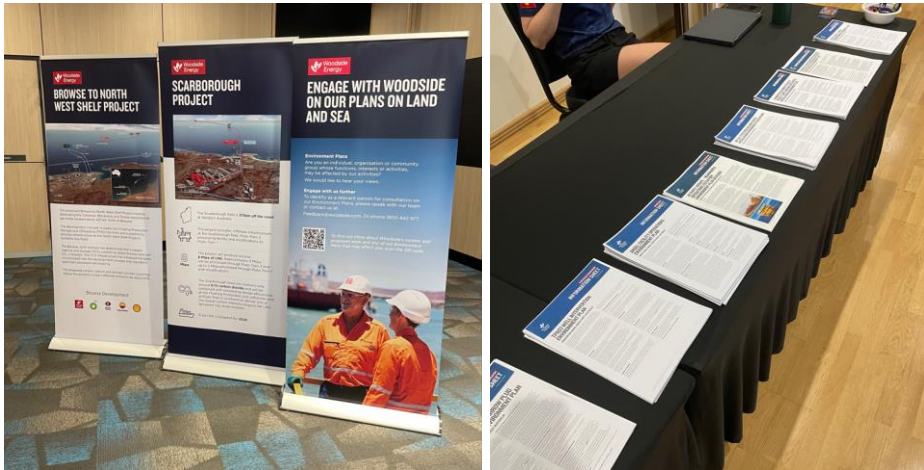
Karratha Shopping Centre – 18 September 2023



Stybarrow End State Decommissioning Environment Plan



Red Earth Arts Precinct (18 September 2023)



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South Hedland Square (19 September 2023)



Roebourne – Woodside Office (20 September 2023)

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3.39 Line left intentionally blank

3.40 Community Information Session – Carnarvon and Denham (16 and 17 October 2023)

Newspaper advertisement: Pilbara News (4 October 2023)

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NEWS 13

Wednesday, October 4, 2023

MinRes in \$24m deal with local company

DANIEL SPENCE

Local Pilbara Indigenous-owned business Djoleanna Pty Ltd has been awarded a \$24 million contract by Mineral Resources as part of the company's flagship Onalow Iron project.

It is the largest contract MinRes has ever signed with an Indigenous-owned business, as well as the first contract awarded to Djoleanna Pty Ltd, which is a Robe River Kuruma business. The Robe River Kuruma people are the traditional owners of the land on which the Ken's Bore mine site is located.

The four-year contract is for exploration earthworks at Ken's Bore mine site, east of Onalow, including constructing access tracks, building drill pads, road maintenance and general earthworks.

Djoleanna Pty Ltd will employ about 10 people as part of the contract including a project manager, mechanics, operators and administration staff.

Djoleanna Pty Ltd owner Beran Wally, who grew up on country, said: "The support provided by MinRes has given us the confidence and capacity to help establish and grow our business. MinRes have shown us action and given us commitments. It's unreal for them to invest and give us a go."

MinRes managing director Chris Ellison said that the company was proud to partner with businesses such as Djoleanna that had such a strong connection to country.

"Providing practical guidance and support, such as guaranteeing finance for equipment and plant, helps to build local capability and ensure Indigenous-owned businesses share in our success," he said.

At the contract signing ceremony in Perth, Mr Wally presented traditional gifts to Mr Ellison, including boomerangs, a shield and a long stick.



SUPPORTING OUR LOCAL COMMUNITIES

The MinRes Community Fund supports our commitment to making meaningful contributions to the communities in which we operate.

Grants of up to **\$10,000** are available to eligible local organisations to support programs and events that help create strong, vibrant and healthy communities.

Applications are open to groups operating in the **Pilbara and Goldfields-Esperance** regions or within the **Shires of Yilgarn, Irwin and Mingenew**.

Applications accepted between 1 to 31 October 2023.

TO APPLY
[visit: mineralsresources.com.au/our-sustainability/community](http://visit.mineralsresources.com.au/our-sustainability/community)
 or email communities@mr1.com.au



Schools to get a staff cash boost

DANIEL SPENCE

Pilbara schools will benefit from a multi-million-dollar cash injection from the State Government to recruit and retain staff.

Education Minister Tony Buti said the success of last year's temporary Regional Attraction and Incentive Package meant an additional 18 schools would benefit from \$16.48 million worth of incentive packages.

Schools in the Pilbara who will receive a boost include Broome Senior High School, Carnarvon Community College, Karratha Senior High School, Hedland Senior High School, Tom Price Senior High School and Newman Senior High School.

The incentive helps rural schools to attract and recruit teachers and retain staff and school administrators at schools by providing additional financial incentives.

Staff members will receive between \$5000 and \$17,000 for working in rural and remote public schools for the 2024 school year.

The incentives will be paid in two instalments: the first at the start of the 2024 school year, the balance paid at the end of the 2024 school year.

Dr Buti said schools in regional and remote areas faced additional challenges when recruiting and retaining teachers.

"This significant investment will bring greater continuity for regional and remote students, their families, and the whole community," he said. "The temporary Regional Attraction and Retention Incentive was initially allocated to 48 regional and remote schools."



FIND OUT MORE ABOUT OUR PROPOSED ACTIVITIES

ARE YOU INTERESTED IN WHAT WOODSIDE HAS PLANNED ON LAND AND SEA?

We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed activities.

Speak to our friendly team members at one of our sessions in October.

<p>Monday, 16 October 2023 Between 10:00am - 2:00pm Gwoonwardu Mia 146 Robinson Street Carnarvon</p>	<p>Tuesday, 17 October 2023 Between 9:00am - 1:00pm Denham Town Hall Hughes Street Denham</p>
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You can access our consultation information, provide feedback and subscribe for updates by scanning the QR code.




Government of Western Australia
Department of Health

Fluoridation for the Newman drinking water system

Community water fluoridation helps protect teeth against decay and is a safe and effective way of improving oral health. More than 92 per cent of the Western Australian population, including the Perth metropolitan area and most large regional communities in the Pilbara and other parts of Western Australia, has benefited from fluoridation of drinking water for more than 40 years.

Fluoridation equipment has been installed at the water treatment plant servicing Newman and is now operational. As with similar plants located throughout Western Australia, the Department of Health will monitor the performance of the water treatment plant to ensure compliance with the Australian Drinking Water Guidelines and the Fluoridation of Public Water Supplies Act 1966.

For more information please contact the Department of Health by email to drink@health.wa.gov.au or call 08 9222 2000 or visit health.wa.gov.au and search fluoridation.

Dr Andrew Richardson
Chief Health Officer

Banners and stand information

Gwoonwardu Mia (16 October 2023)

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Stybarrow End State Decommissioning Environment Plan



Social media tile and story (9 to 16 October 2023)

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Carnarvon tile and story

Are you interested in what Woodside has planned on land and sea?

Stop by and say hello to our friendly team in Carnarvon.

We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed activities.

Monday, 16 October 2023
Between 10.00am - 2.00pm
Gwoonwardu Mia
146 Robinson Street
Carnarvon


 Woodside Energy

Are you interested in what Woodside has planned on land and sea?

Stop by and say hello to our friendly team in Carnarvon.

We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed activities.

Monday, 16 October 2023
Between 10.00am - 2.00pm
Gwoonwardu Mia
146 Robinson Street
Carnarvon

 Woodside Energy


Denham tile and story

Are you interested in what Woodside has planned on land and sea?

Stop by and say hello to our friendly team in Denham.

We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed activities.

Tuesday, 17 October 2023
Between 9.00am - 1.00pm
Denham Town Hall
Hughes Street
Denham


 Woodside Energy

Are you interested in what Woodside has planned on land and sea?

Stop by and say hello to our friendly team in Denham.

We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed activities.

Tuesday, 17 October 2023
Between 9.00am - 1.00pm
Denham Town Hall
Hughes Street
Denham

 Woodside Energy

Shark Bay Townhall (17 October 2023)

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3.41 Community Information Session – Exmouth (23 October 2023)

Newspaper advertisement: Pilbara News Advertisement (11 October 2023)

Animal flight policy criticised

CAIN ANDREWS

A prominent pet adoption agency has slammed Qantas' animal flight policy claiming it will lead to the unnecessary deaths of hundreds of animals.

Over the past year, animal adoption agency Saving Animals From Euthanasia's regional branches in Broome, Newman, Hedland and Karratha collectively rescued 1826 animals with 82.4 per cent or 956 of them requiring air transport to get to their new homes.

But with Qantas now enforcing a "no-fly" policy for animals when temperatures are forecast to reach more than 35C SAFE founder Sue Hedley said rescue animals that required air transport might have to be destroyed.

"It is crucial to recognise that this policy alteration could have dire consequences for these animals. If they are unable to reach their destination and find new homes, they may tragically face euthanasia as an alternative," she said.

Ms Hedley said SAFE had engaged with Qantas to try to find alternative solutions such as earlier or only allowing animals on early morning flights on days over 35C but was knocked back by the company.

"In over 25 years of operation, SAFE has never had a death during transportation from regional areas to Perth, no matter the temperature," she said.

"Unfortunately, we have been advised that the policy will remain



Sue Hedley & Salem. Pic: Helen Oake

and that no exceptions will be made.

"We firmly believe that the risks associated with this policy extend far beyond those related to flying on a day when temperatures may reach 35C later in the day."

A Karratha woman, who only wishes to be identified as Simone, was told her two dogs would not be allowed to catch a Qantas flight on October 5 because of the policy.

According to Simone, at the last minute she was told her dogs could not catch the flight despite being told the night before her dog would be able to fly.

"It's ridiculous we're here with our dogs everything's packed, and we're going away as well."

"With the way things are in Karratha with the shortage of space available there's no one to look after our pets," she said.

"It's not just inconvenient, it's unethical as they're not even adhering to their own policy."



Simone's dogs faced being bumped off a Qantas flight because of the airline's heat policy.

"I get it's about animal safety but what is ridiculous is that the policy clearly states 35C and above and it (was) only 33C."

Qantas eventually made an exception for Simone and her dogs on the day, however, she claims she was told by those at the airport to not tell Ms Hedley about the incident.

Last year, temperatures in Karratha exceeded 35C on 106 days, with a consecutive period of 42 days over 35C between February 12 and March 26.

Responding to questions about the policy, a Qantas spokesperson said the policy was led by the International Pet and Animal Association and the International

Air Transport Association. "Qantas takes the safety and welfare of pets and animals who travel with us extremely seriously," the spokesperson said.

"This is why we don't transport pets when temperatures exceed 35C or fall below 5C, due to the stress and anxiety this could cause."

FIND OUT MORE ABOUT OUR PROPOSED ACTIVITIES

ARE YOU INTERESTED IN WHAT WOODSIDE HAS PLANNED ON LAND AND SEA?

We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed activities.

Speak to our friendly team members at one of our three sessions in October.

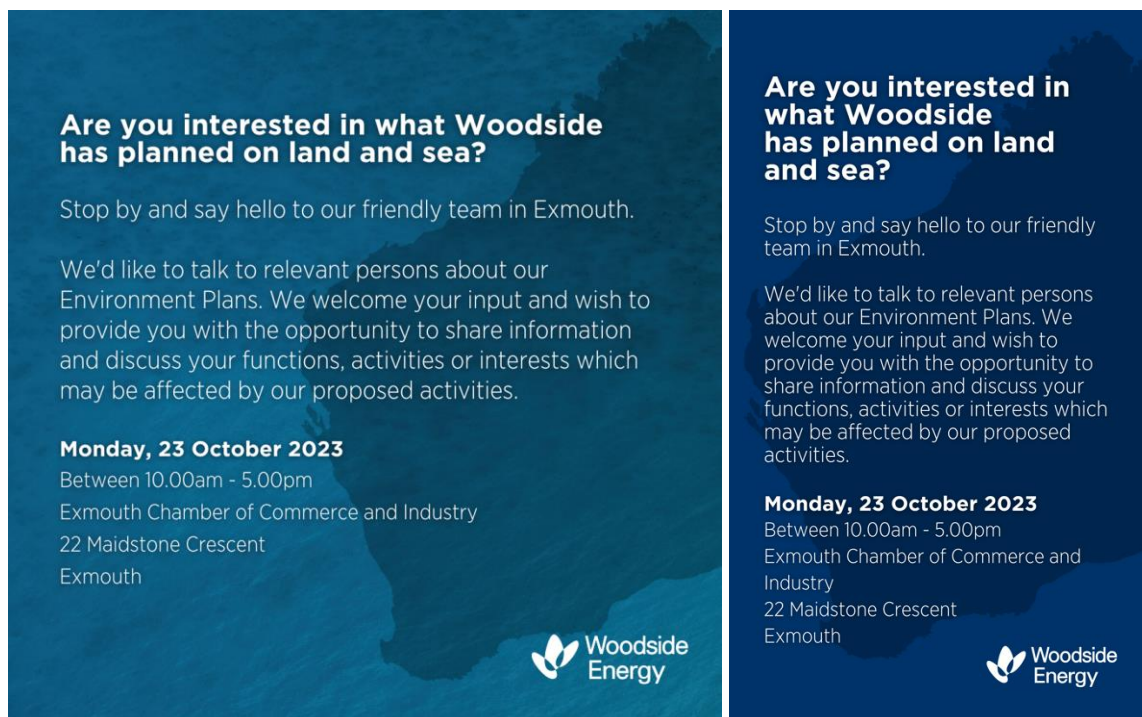
<p>Monday, 16 October 2023 Between 10:00am - 2:00pm Gwoonwardu Mia 146 Robinson Street Carnarvon</p>	<p>Tuesday, 17 October 2023 Between 9:00am - 1:00pm Denham Town Hall Hughes Street Denham</p>
<p>Monday, 23 October 2023 Between 10:00am - 5:00pm Exmouth Chamber of Commerce and Industry 22 Maidstone Crescent Exmouth</p>	

You can access our consultation information, provide feedback and subscribe for updates by scanning the QR code.

Northwest Multicultural Show 2023

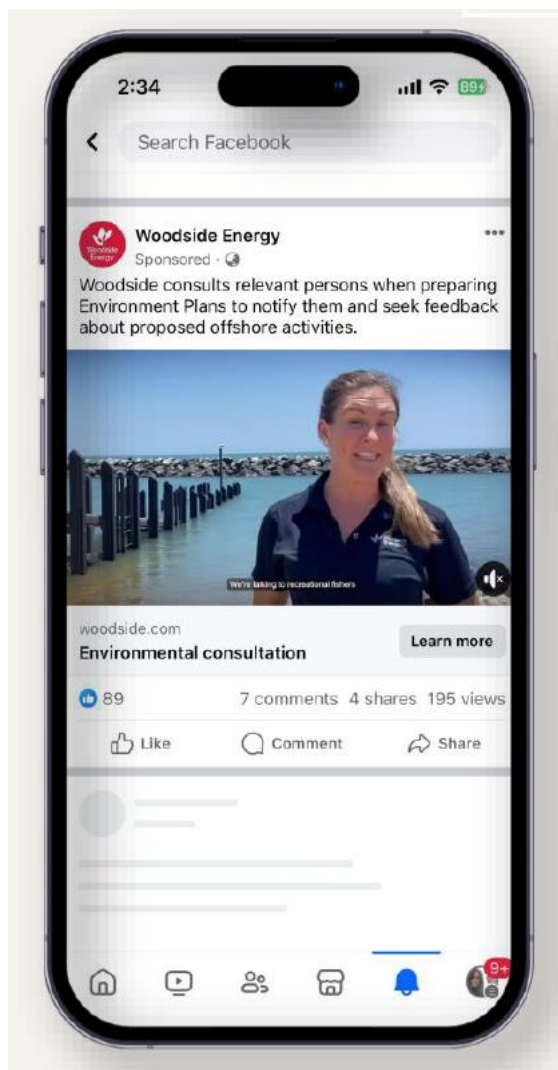
SATURDAY
14 OCTOBER 2023
1:00PM - 5:00PM
RED EARTH ARTS PRECINCT

Social media tile and story (2-9 September 2023)



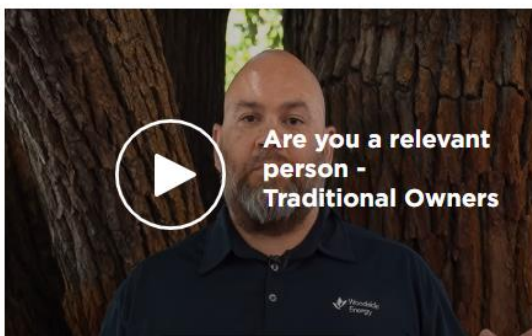
3.42 Are you a Relevant Person? Social Media Campaign (October 2023 onwards)

This social media campaign on Facebook and Instagram part of Woodside's broader consultation approach to enable self-identification and give relevant persons 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).



Are you a relevant person?

You may be a relevant person if you or your organisation have functions, interests, or activities that may be affected by an offshore petroleum activity proposed under an environment plan. Watch the short clips below to find out more.



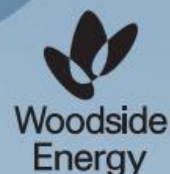
3.43 Let's Talk Newsletter (March 2024)

A printed and online monthly newsletter that outlines current and planned activities, their locations, and how to provide feedback. The inaugural March issue included notes on the Stybarrow area.

LET'S TALK

MARCH 2024

OUR PLANS,
YOUR SAY



WELCOME

Welcome to the first edition of Let's Talk – a platform to stay connected on Woodside Energy's Australian happenings and the stories behind our activities and operations. Dive in and explore to learn more about what Woodside has planned on land and sea; when, where and how we're engaging on our activities; and how you can provide feedback to us. If you or your organisation have functions, interests, or activities that may be affected by our planned activities, we want to hear from you.

THE RUNDOWN

In December 2023, The Scarborough Energy Project received secondary Commonwealth environmental approvals for key offshore work scopes. The project is now well underway (over 50% complete) with the commencement of relevant offshore construction activities.

Woodside also received environmental approvals in November and December 2023 enabling in-field works for decommissioning activities at the Griffin (65 km northwest of Onslow) and Stybarrow fields (51 km to the northwest of the North West Cape).

As part of the decommissioning of the Enfield field, Woodside received environmental approvals in July 2023 for the removal of the Nghanurra riser turret mooring (RTM) from the permit area off the coast of Exmouth.



The Nghanurra RTM is a metal structure, about 83 metres long, on which Woodside previously moored an oil producing facility.

The RTM allowed the facility to rotate with weather while moored and also brought subsea production lines from the Enfield oil field to a Floating Production Storage and Offloading facility. Enfield ceased production in November 2018 and the RTM was removed as part of decommissioning activities at the field, which also included the permanent plugging and abandonment of 18 former production wells.

The decommissioning concept for the Nghanurra RTM was matured over more than two years of careful planning and detailed engineering, undertaken in conjunction with a range of specialist contractors.

In late 2023, Woodside safely and successfully completed activities in the Environment Plan, including lifting the RTM in one piece out of the water and placing it on a barge for transportation to the Australian Marine Complex (AMC) at Henderson.



To stay updated, subscribe for future editions click [here](#) or visit

www.woodside.com/what-we-do/consultation-activities

The RTM is now in its final stages of deconstruction at the AMC, expected to be completed by April 2024. More than 95% of the Nghanurra RTM will be recycled or re-used, supporting local employment and contracting opportunities.

[Click here to view the safe removal of Nghanurra Riser Turret Mooring](#)

Join the conversation at woodside.com/sustainability/consultation-activities



LET'S TALK

TALKING POINT

Woodside safely completes marine survey

A marine seismic survey conducted by Woodside Energy in December 2023 applied controls to avoid interaction with whales as part of the environment planning process.

Once the Environment Plan for the activity was accepted by the Regulator, Woodside conducted the survey from 2 December to 31 December 2023.

The survey was undertaken with a range of standard and project-specific controls designed to reduce interactions with marine fauna including a dedicated spotter vessel with trained Marine Fauna Observers operating during daylight hours and the use of a Passive Acoustic Monitoring system to detect the presence of vocalising whales.

A shut down zone was in place for whales detected within 2 km of the acoustic source and for sea turtles spotted within 100 m of the acoustic source.

There were also specific controls in place relating to whale species of potential cultural significance, such as pygmy blue whales and humpback whales.

This included an extended 'limits of visibility' shutdown zone if these whale species or large unidentified whales were detected by observers, within their limits of vision.

Weekly project update reports were published on the Woodside website during the survey to provide information on cetacean or marine turtle observations. These reports confirmed that marine fauna continued to move through the area during the survey. They also confirmed that no pygmy blue whale or sea turtles were sighted during the survey.



COMMUNITY SPOTLIGHT

The Scarborough Energy Project

The Scarborough Energy Project will provide a boost to the WA economy and communities, growing jobs and bringing work through the supply chain, with a focus on the Pilbara region.

A second processing train, Pluto Train 2, is being constructed within the existing Pluto LNG facility located near Karratha in the Pilbara Region of Western Australia and is currently set to process about five million tonnes per annum of Scarborough gas. The project is providing various opportunities for local businesses in Karratha. To date, with collaboration from Woodside's construction partner Bechtel, the Scarborough Energy Project has injected more than \$90 million locally and contracted over 65 Karratha businesses.

Local business spotlight: ATOM

We're spotlighting local, family-owned business: ATOM. The company name stands for Aqua Terra Oil & Mineral. ATOM has recently been contracted to supply industrial consumables, safety supplies and personal protective equipment products for the Pluto Train 2 construction.

ATOM believes locals serve locals best which is why its 22 employees supporting the project are all local to Karratha. Nearly half of the team are female and there is one Indigenous employee.

The contract has supported ATOM to expand its workforce increasing local employment opportunities.

Terry Klowss, Bechtel's Site Manager for Pluto Train 2 said, "ATOM's 100% local workforce helps us ensure our partnerships are benefiting local people - this is something that is very important to us at Bechtel."



“Long-term, it's estimated Pluto Train 2 will sustain around 600 roles, once the project is operational, across Western Australia, including 70 residential positions in Karratha.”

Like Woodside, ATOM is a nationwide company, with roots in Western Australia. ATOM opened its Karratha branch in 1980. In the same decade, Woodside commissioned the North West Shelf Project.

ATOM also shares Woodside's commitment to invest where we operate, building meaningful relationships and supporting our local community.

Phil Donders, National Team Leader ATOM said, "At ATOM, we believe in investing in the success and sustainability of the communities we operate within. This is why ATOM welcomed the opportunity to support the Pluto Train 2 Project through the supply of industrial consumables and PPE."

With access to more than one million products, ATOM is one of Australia's fastest growing industrial and safety supply business.

Join the conversation at [woodside.com/sustainability/consultation-activities](https://www.woodside.com/sustainability/consultation-activities)



COME CHAT WITH US

Woodside consults on our activities. Join us at local North West community events and at our offices so you can talk to us about our operations, decommissioning activities or proposed projects.

If you're interested in what Woodside has planned on land and sea, come and chat to our friendly team. You can find out more and share your feedback about Woodside's work in the North West, our Environment Plans and our current and proposed projects.

Upcoming engagement opportunities

ROEBOURNE
22 March 2024 | 1:00pm – 3:00pm
 Woodside Office
 39 Roe Street, Roebourne, WA, 6718

KARRATHA
23 March 2024 | 9:00am – 2:00pm
 Karratha City Shopping Centre
 16 Sharpe Avenue, Karratha, WA, 6714

DAMPIER
24 March 2024 | 9:00am – 12:00pm
 Dampier Beachside Markets
 Hampton Oval, Dampier, WA, 6713

DAMPIER
3 April 2024 | 10:00am – 2:00pm
 North West Shelf Project Visitors Centre
 Burrup Road, Dampier, WA, 6713

“If you're interested in what Woodside has planned on land and sea, come and chat to our friendly team.”



HAVE YOUR SAY

Woodside consults relevant persons in the course of preparing our Environment Plans. This is to notify them, obtain their input and to assist Woodside to confirm current measures or identify additional measures, if any, that may be taken to lessen or avoid potential adverse impacts of the proposed activity on the environment.

We welcome your input so please contact us if you'd like to discuss your functions, interests or activities which may be affected by our proposed activities.

Environment Plan	Activity Type	Location	Consultation Dates
Pluto Facility Operations	Operations	-190km north-west of Dampier	February – March 2024
North Rankin Complex Operations	Operations	-135 km offshore from Dampier	April – May 2024
Scarborough Trunkline Operations (State)	Operations	-30km north of Dampier	April – May 2024

You can access our consultation information, provide feedback and subscribe for updates by visiting www.woodside.com/what-we-do/consultation-activities or click [here](#).

PROGRESS SNAPSHOT

You can view Environment Plans for approved projects and activities by visiting: info.nopsema.gov.au/home/approved_projects_and_activities or click [here](#).

Environment Plan	Activity type	Date Accepted	Status
Stybarrow Decommissioning and Field Management	Decommissioning	8 January 2024	Work intended to commence in 2024
Stybarrow Plug and Abandonment	Decommissioning	21 December 2023	In progress
WA-34-L Pyxis Drilling and Subsea Installation (Revision)	Project	21 December 2023	Work intended to commence in 2024
Griffin State Pre-Decommissioning	Decommissioning	20 December 2023	Completed
Scarborough Seabed Intervention and Trunkline Installation	Project	13 December 2023	In progress
Scarborough WA-61-L and WA-62-L Subsea Infrastructure Installation	Project	8 December 2023	In progress
Scarborough Drilling and Completions	Project	1 December 2023	In progress
Scarborough 4D B1 Marine Seismic Survey	Survey	1 December 2023	Completed
Griffin Gas Export Pipeline Decommissioning	Decommissioning	30 November 2023	In progress
TPA03 Well Intervention	Project	28 November 2023	In scheduling
Griffin Decommissioning and Field Management	Decommissioning	21 November 2023	In progress
Nganhurra Operations Cessation	Decommissioning	27 July 2023	Completed

LET'S TALK

What's an Environment Plan?

A Titleholder must have an accepted Environment Plan (EP) in order to carry out certain petroleum activities. An EP sets out information about the proposed activity, how the activity may potentially impact the environment, measures to mitigate potential risks and impacts to as low as reasonably practical (ALARP) and acceptable levels, a record of consultation undertaken by the Titleholder, preparedness for emergencies and information on how environmental performance will be monitored and reported.

When an EP is being developed, a Titleholder:

- Engages in consultation with relevant persons and organisations.
- Provides information on its activities.
- Engages in dialogue with persons being consulted (where appropriate).
- Responds to claims or objections about the activity.

Consultation is an important part of environmental management.

Consultation on Environment Plans

Consultation provides an opportunity for persons who wish to provide feedback or raise concerns about:

- The potential adverse impacts of the activity on their functions, interests or activities, to seek information about the activity.
- How the Titleholder intends to manage the activity so that the risks and impacts are managed to ALARP and acceptable levels.

Information provided by the relevant person may assist the Titleholder to better put in place measures to manage the risks and impacts of an activity.

Commonwealth Waters

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) is Australia's independent regulator for health and safety, structural and well integrity, and environment management for offshore petroleum and greenhouse gas storage activities in Commonwealth waters.



EPs submitted to NOPSEMA for assessment are made available on the NOPSEMA website.

Woodside consults in the course of preparing Commonwealth EPs in accordance with section 25 of the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023*. Consultation methodologies are designed to:

- Identify relevant persons.
- Provide them with sufficient information and a reasonable period of time to allow them to make an informed assessment of the possible consequences of the proposed activity on their functions, interests or activities.
- Assist Titleholders to consider and adopt appropriate measures in response to claims or objections raised during consultation.

Woodside identifies relevant persons for consultation in accordance with section 25 of the Environment Regulations. Alternatively persons who wish to consult can self-identify, in accordance with regulation 25 of the Environment Regulations.

Environment That May Be Affected (EMBA)

The environment that may be affected (EMBA) is the largest area where a petroleum activity could potentially have an environmental consequence (direct or indirect impact). The broadest extent of the EMBA takes into consideration planned activities and unplanned events. Woodside's assessment of relevant persons is based on the EMBA assessed for the activity.

State Waters

The Department of Energy, Mines Industry Regulation and Safety (DEMIRS) is the regulator for activities in State waters in Western Australia. Woodside follows a similar process to identify relevant persons to consult for State EPs. However consultation for State EPs is based on activities in the operational area, not unplanned events in the EMBA. For State EPs, only EP summaries are made public on the DEMIRS website once the EP has been approved.

Are you a Relevant Person?

Recently, Woodside launched an information campaign online and on social media focusing on the Kimberley, Pilbara, Gascoyne and Murchison areas to build a greater understanding of how members of those communities can get involved in consultation and the environmental planning process.

A series of short videos were shared on Woodside's website and on social media with targeted information for different community members including commercial fishers, marine users and traditional custodians.

In the videos, Woodside tells community members about our EPs and asks viewers who might be relevant to our activities to self-identify and participate in consultation.

The campaign is still running and provides suggestions as to ways to get into contact with Woodside and learn more about our EPs.

[Click here to learn more](#)

Join the conversation at [woodside.com/sustainability/consultation-activities](https://www.woodside.com/sustainability/consultation-activities)

